



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Steven P. Jones

Serial No.: 09/903,177

Filed: July 11, 2001

For: METHOD AND APPARATUS TO VARY FUEL PRICES FOR
VEHICLES BASED ON ENVIRONMENTAL AND
CONSERVATION CONSIDERATIONS

Group Art Unit: 3629

Confirmation No.: 9365

Assistant Commissioner for Patents
Washington, DC 20231

APPEAL BRIEF IN SUPPORT OF APPEAL

FROM THE PRIMARY EXAMINER TO THE BOARD OF APPEALS

Sir:

Applicant herewith submits an appeal brief in support of the appeal to the Board of Appeals from the decision dated January 13, 2005, of the Primary Examiner finally rejecting claims 1-36.

The appeal brief fee of \$340.00 is:

- Enclosed.
- Not required. (Fee paid in prior appeal.)
- Charged to Deposit Account No. **09-0465**. A duplicate copy of this sheet is enclosed.

Docket No.: ROC920010100US1

Serial No.: 09/903,177

05/10/2005 MAHMED1 00000055 090465 09903177

01 FC:1402 500.00 DA

This is an appeal of a Final Rejection under 35 U.S.C. 101 of claims 1-36 of Application Serial No. 09/903,177, filed July 11, 2001. This brief is submitted pursuant to a Notice of Appeal filed March 11, 2005, as required by 37 C.F.R. 1.192.

Docket No.: ROC920010100US1
Serial No.: 09/903,177

1. Real Party in Interest

The Real party in interest is International Business Machines, Inc., the assignee of the above-identified application.

2. Related Appeals and Interferences

There are no related appeals or interferences for the above-identified application.

3. Status of Claims

Claims 1-36 are pending. Applicant appeals from the final rejection of claims 1-36.

4. Status of Amendments

No amendments to the specification or claims have been submitted.

5. Summary of Invention

Applicant's invention is a method and apparatus that causes a per unit price of fuel to be at least partially determined by vehicle specific data that is stored in a vehicle and communicated to a fuel pump.

The vehicle specific data contains information particular to the vehicle. For example, as described in the summary of the invention on page 2 of the application, "This invention provides for charging per unit fuel prices that are different for different vehicles. For example, this invention provides for charging a lower per unit fuel price for vehicles that are able to go further on a unit of fuel. This invention provides for charging a lower per-unit fuel price for vehicles that are lighter in weight, and therefore less damaging to the road system. This invention provides for charging a lower per unit fuel price for vehicles that are capable of using fuels a portion of which are renewable, such as

ethanol mixtures. Another factor that can be used to adjust per unit fuel price is a vehicle's rating on emissions."

6. Issue

A first issue is whether the Examiner is in error in his rejection of claims 1-21 as being unpatentable under 35 U.S.C. 101 as being unconstitutional as alleged in item 3 on page 2 of an Office Action dated 1/13/2005.

A second issue is whether the Examiner is in error in his rejection of independent claims 1, 22, and dependent claim 36 (claim 36 depends from claim 22) under 35 U.S.C. 102(b) as stated in item 5 on page 3 of the Office Action dated 1/13/2005.

A third issue is whether the Examiner is in error in his rejection of independent claim 22 and dependent claims 28-33 under 35 U.S.C. 102(b) as stated in item 6 on page 4 of the Office Action dated 1/13/2005.

A fourth issue is whether the Examiner is in error in his rejection of independent claim 22 and dependent claims 33-35 under 35 U.S.C. 102(e) as stated in item 7 on page 4 of the Office Action dated 1/13/2005.

Applicant believes that the two independent claims of the application, claims 1,22 are allowable and that the Examiner's rejections of claims 1,22 are in error. If independent claims 1,22 are allowable, their dependent claims are also allowable.

7. Grouping of Claims

For purposes of this appeal, claims 1-36 stand or fall together.

8. Argument

Addressing the first issue, the Examiner's rejection of claims 1-21 under 35 U.S.C. 101 the Examiner argued, on page 2 of the Office Action dated 1/13/2005, that

Docket No.: ROC920010100US1
Serial No.: 09/903,177

“Any patent issuing on claims 1-21 would have the effect of precluding the Congress from freely collecting taxes (i.e., the taxing of fuel purchases) pursuant to Article I, Section 8, Clause 1. If the Congress decided to tax fuel purchases and make the amount of the tax dependent on certain factors related to a person’s vehicle, a patent granted on claims 1-21 could prevent Congress from collecting taxes used to provide for the general Welfare of the United States.”

The Examiner made the same rejection in a first Office Action dated 8/25/2004. Applicant responded on October 29, 2004 by (on page 9 of the Response) directing “the Examiner’s attention to United States Patent and Trademark Office’s ‘General Information Concerning Patents’”. Applicant provided a copy of that document along with his Response. The USPTO document states on page 26 that “The government may use any patented invention without permission of the patentee, but the patentee is entitled to obtain compensation for use by or for the government.”

Surprisingly, in his Office Action dated 1/13/2005, the Examiner maintained his rejection, choosing to disparage the USPTO document (page 13 of the Office Action dated 1/13/2005), and continued, “*The cited portion of the PTO handout even discloses that Congress is responsible for compensation to the patentee because the patentee can sue the government in Federal Court, which seems to contradict the concept of ‘freely collecting taxes.’ Even considering the text of the PTO handout, the rejection will not be removed and the argument is considered non-persuasive.*”

The government’s ability to use any patented invention is notoriously well known, and Applicant is surprised at both the Examiner’s original rejection and the Examiner’s maintenance of the rejection after being informed of the patentee’s inability to exclude the government from practicing the teachings of the patent. The USPTO’s “General Information Concerning Patents” citation is simply the essence of 28 U.S.C. 1498 copied into a USPTO publication. The text of 28 U.S.C. 1498(a) is given below:

“Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner’s remedy shall be by action against the United States in the United States Court of Federal Claims for the recovery of his reasonable and entire compensation for such use and manufacture. Reasonable and entire compensation shall include the owner’s reasonable costs, including reasonable fees for expert witnesses and attorneys, in pursuing the action if the owner is an independent inventor, a nonprofit organization, or an entity that had no more than 500 employees at any time during the 5-year period preceding the use or manufacture of the patented invention by or for the United States. Notwithstanding ~~III~~ the preceding sentences, unless the action has been pending for more than 10 years from the time of filing to the time that the owner applies for such costs and fees, reasonable and entire compensation shall not include such costs and fees if the court finds that the position of the United States was substantially justified or that special circumstances make an award unjust.

For the purposes of this section, the use or manufacture of an invention described in and covered by a patent of the United States by a contractor, a subcontractor, or any person, firm, or corporation for the Government and with the authorization or consent of the Government, shall be construed as use or manufacture for the United States.

The court shall not award compensation under this section if the claim is based on the use or manufacture by or for the United States of any article owned, leased, used by, or in the possession of the United States prior to July 1, 1918.

A Government employee shall have the right to bring suit against the Government under this section except where he was in a position to order, influence, or induce use of the

invention by the Government. This section shall not confer a right of action on any patentee or any assignee of such patentee with respect to any invention discovered or invented by a person while in the employment or service of the United States, where the invention was related to the official functions of the employee, in cases in which such functions included research and development, or in the making of which Government time, materials or facilities were used.”

The Examiner’s assertion above regarding the government “freely collecting taxes” is also curious. It is firmly and indisputably established that the government can legally practice the teachings of any patent, so “freely” can not pertain to any patentee’s ability to exclude the government from practicing the teachings of their patent. If, on the other hand, the Examiner’s intent was “freely” meaning “without cost”, the assertion is equally in error. The cost of collecting taxes is high, not “free”, with the Internal Revenue Service budgets running approximately \$10 billion per year. The IRS must employ people, purchase data processing equipment, mail forms, and so on, paying costs of collecting taxes. The government indisputably would remain “free” to use the invention claimed in the sense that the patentee could not exclude the government from using the invention. The government has never been able to collect taxes “freely” in the sense of having no costs associated with the collection.

For the above reasons, referring to issue 1, Applicant submits that the Examiner’s rejection of claims 1-21 under 35 U.S.C. 101 is in error.

Addressing the second issue, the Examiner’s rejection of independent claims 1,22 and dependent claim 36 under 35 U.S.C. 102(b) as being anticipated by the article entitled “Minnesota Representative Proposes Mileage Tax to Replace Gas Tax (1/4/00)”. The Examiner argues that “The article discloses the step of selling fuel, where the tax the government will charge for the fuel purchase depends on the mileage one drives. A chip

(storage device) in the fuel tank stores vehicle data, and a chip in the fuel pump calculates the amount of the tax, which results in an end price for the fuel purchase.”

The Examiner cited the same article in his rejections in the Office Action dated 8/25/2004. In response, Applicant responded in his Response of October 29, 2004:

Applicant first notes that a careful reading of the article shows that the proposed scheme is diametrically opposite of the present invention. That is, ‘mileage’ in the article refers to how many miles have been driven, and will tax on miles driven, not fuel efficiency, weight, etc. The problem the article is attempting to solve is to collect more taxes from efficient vehicles, which travel further on a gallon of gas, as opposed to the intent of the present invention, which is to encourage purchase of efficient vehicles by charging less per gallon. To the point of defeating the rejection under 35 U.S.C. 102(b), Applicant submits that Applicant’s claim element, ‘storing vehicle specific data in the vehicle’ suffices. The article cited simply suggests ‘that computer chips in the gas tank and in the fuel pump could calculate how many miles a vehicle has been driven’. To compute this, only a vehicle’s odometer change since last purchase. Odometer readings are not vehicle specific data. For example, an SUV and an efficient hybrid would both report the same number of miles going between point A and point B.’

In the Office Action dated 1/13/2005, page 14 the Examiner states:

Applicant has argued that the limitation of ‘storing vehicle specific data in the vehicle’ is not found in the prior art because the prior art only stores miles driven by a vehicle and this cannot be called vehicle specific data. The entire argument comes down to whether or not it is reasonable to consider the miles a specific vehicle has driven as vehicle specific data. Odometer readings for vehicles are vehicle specific data as they represent the miles the vehicle has been driven. The examiner respectfully disagrees with applicant’s interpretation of the term ‘vehicle specific data’, which is a broad term and can mean almost anything. Concerning the argument about two vehicles going from A to

B, just because another vehicle will have a similar or same mileage does not mean that the mileage is not vehicle specific data."

Applicant does agree with the Examiner that the entire argument comes down to whether or not it is reasonable to consider the miles driven between fueling to be vehicle specific data as taught and claimed by the present invention.

Applicant respectfully disagrees with the examiner's assertion that vehicle specific data can mean almost anything. Webster's Ninth New Collegiate Dictionary, © 1983, ISBN 0-87779-508-7 defines "specific" as meaning (1)(a) constituting or falling into a specifiable category, (1)(b) sharing or being those properties of something that allow it to be referred to a particular category. As used in the application, "Vehicle specific data" clearly means data that identifies what particular category the particular vehicle is in. Applicant provided many examples of particular categories in the specification of what is meant by vehicle specific data, e.g., EPA gas mileage; weight of the vehicle; quantities of undesirable emissions of the vehicle as determined by an authorized agency; hybrid gas/electric or gas/fuel cell; and capability of using fuels a portion of which are renewable are named examples of vehicle specific data. In **all** of these examples, vehicle specific data identifies a characteristic category of the particular vehicle associated with the vehicle specific data. The fact that a 12 miles per gallon SUV's odometer registers 200 miles between point A and point B does **not** make "200 miles" a "vehicle specific data" as the Examiner alleges, because odometers in **ALL** vehicles, from the most profligate SUV to the most economical hybrid, traveling between point A and point B, will register 200 miles on that route. Even a pedestrian's pedometer would register 200 miles after a long walk from point A to point B.

For the above reasons, referring to issue 2, Applicant submits that the Examiner's rejection of independent claims 1,22, and dependent claim 36 under 35 U.S.C. 102(b) is in error.

Addressing the third and fourth issues (The Examiner, in the Office Action dated 1/13/2005 used Walkey and Marion in the same sentence in his discussion), the Examiner's rejection of independent claim 22 and dependent claims 28-33 under 35 U.S.C. 102(b) as stated in item 6 on page 4 of the Office Action dated 1/13/2005, and the Examiner's rejection of independent claim 22 and dependent claims 33-35, the Examiner states:

Claims 22, 28-33 rejected under 35 U.S.C. 102(b) as being anticipated by Walkey et al. (4469149).

For claim 22,28,29,30,33, Walkey discloses a system for determining the price of fuel based on data transmitted from the vehicle to the pump. Walkey discloses a storage device 10, a transmitter 20. The pump determines the price of fuel based on the data transmitted to the pump. See column 5, lines 3-6. The price for fuel will be determined by the grade of fuel one desires."

In his response to the Office Action on October 29, 2004, on this same allegation, Applicant stated:

The actual wording of column 5, lines 3-6 states: 'The fuel grade requirement of the vehicle can if desired be included in the vehicle identification code to prevent refueling with incorrect fuel.' In fact, Walkey simply ensures that an incorrect fuel is not used. No mention is made in Walkey as to teaching determining a per unit price for fuel, since Walkey could not pump an incorrect fuel; the only fuel pumpable remains at a fixed price per unit and is not determined by the vehicle specific information. The Applicant respectfully submits that the Examiner's allegation that Walkey's invention determines the per unit price of fuel is as inapplicable to the Applicant's claim as if it were alleged that a leaded pump nozzle determines the per unit price of fuel because the leaded pump nozzle is large and will not fit into the filler tube of vehicles that require leaded fuel."

In the Office Action dated 1/13/2005, the Examiner counter argues “*For claims 22,28-33 (Walkey et al.) And claims 22, 33-35, (Marion) applicant has argued that there is no teaching of determining the per unit price of fuel. When one stipulates that only super unleaded fuel is to be put into the vehicle, this will result in the price per unit of fuel being determined because you are paying the price for super unleaded, which is a higher per unit price than regular unleaded is. The choice of fuel grade determines the price per unit of fuel you will have to pay. Additionally, with respect to Marion, the amount of gas that a given vehicle will accept before having a full tank is vehicle specific data, contrary to what has been argued.*”

Addressing the Examiner’s counter argument with respect to Marion first (i.e., issue 4, the rejection of claims 22, 33-35), Applicant had responded to the Examiner’s first rejection of claims 22, 33-35 under 35 U.S.C. 102(e) as being anticipated by Marion (2002/0046117) in his October 29, 2004 response:

“*A careful reading of paragraphs 230-243 cited by the Examiner shows no teaching of Applicant’s claim element ‘a fuel pump computer, which determines a per unit price for the fuel, using, at least in part, said data’. In contrast, Marion’s invention (see paragraph 238) simply teaches ‘Once ullage is determined the control system preferably determines or calculates an estimated cost of fueling the vehicle based on the ullage information. In order to do so, the type of fuel and fuel grade must be determined (block 1750). The dispenser controller may provide a prompt at the display 100 for the customer to select the type of fuel and grade desired for fueling (block 1755).’ Applicant further respectfully submits that Marion’s ‘ullage information is any type of information which relates to tank ullage or from which ullage can be derived’ (so the pump can figure out how much gas it would take to fill the tank) is not ‘vehicle specific data’.”* In particular, a volume of fuel reported would apply to vehicles of ANY category and Applicant submits that it is not reasonable to read Marion’s “ullage” as vehicle specific

data. The Examiner did not add any new arguments with respect to Marion in his 1/13/2005 Office Action - see page 15, first paragraph in that Office Action.

Applicant therefore submits that the Examiner is in error in making and maintaining a rejection of independent claim 22 and dependent claims 33-35 over Marion.

Turning back to the Examiner's counterargument in the Office Action of 1/13/2005, issue 3, the Examiner argues on page 14, using Walkey to reject independent claim 22 and dependent claims 28-33:

"When one stipulates that only super unleaded fuel is to be put into the vehicle, this will result in the price per unit of fuel being determined because you are paying the price for super unleaded, which is a higher price per unit of fuel you will have to pay."

Applicant submits his argument relative to Walkey (above) has not been effectively rebutted by the Examiner. Applicant submits that a reasonable person would not conclude that the claim element in independent claim 22 "a fuel pump computer, which determines a per unit price for the fuel, using, at least in part, said data." is taught by Walkey. In Walkey, the customer selects a particular fuel from a variety of different fuels and is simply stopped from purchasing the wrong fuel, just as a larger/smaller nozzle size determines ability to use leaded/unleaded gasoline, and it would be unreasonable to argue that nozzle size determines per unit fuel price. Bottom line, in Walkey, it is the customer, making allowable fuel grade selections, not the fuel pump computer, that determines a per unit price for the fuel, using, at least in part, said data.

For the above reasons, referring to issues 3 and 4, Applicant submits that the Examiner's rejection of independent claim 22, and dependent claims 28-33; and the Examiner's rejection of independent claim 22, and dependent claims 33-35 are in error.

Applicant submits that the above arguments regarding issues 1,2,3,4 clearly show that all of the rejections of independent claims 1 and 22 are in error. Applicants submit that claims 1 and 22 are allowable. Claims 2-21 depend directly or indirectly from claim 1; claims 23-36 depend directly or indirectly from claim 22. Therefore, Applicant submits that all claims are allowable.

9. Summary

For each of the foregoing reasons, it is submitted that the Examiner's rejections of claims 1-36 were erroneous, and reversal of his decisions is respectfully requested.

Date: May 05, 2005

Respectfully submitted,

STEVEN P. JONES

By Robert R. Williams

Robert R. Williams, Patent Agent
Registration No.: 48,395

From:

IBM Corporation
Intellectual Property Law
Dept. 917, Bldg. 006-1
3605 Highway 52 North
Rochester, MN 55901

Telephone: (507)253-2761
Fax: (507)253-2382

CERTIFICATE OF MAILING
UNDER 37 CFR 1.8(a)

I hereby certify that the enclosed or attached correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231, on May 05, 2005.

Susan K. Berge
Susan K. Berge

Docket No.: ROC920010100US1
Serial No.: 09/903,177

APPENDIX OF CLAIMS

1. (Original) A method for selling fuel to a vehicle, wherein the method comprises the steps of:
storing vehicle specific data in the vehicle;
transmitting said data from the vehicle to a fuel pump computer; and
determining, at least partially, by said fuel pump computer, a per unit price of the fuel sold to said vehicle, using said data.
2. (Original) The method of claim 1, wherein the data comprises a value indicative of how far the vehicle is capable of going on a unit of fuel.
3. (Original) The method of claim 1, wherein the data comprises a value indicative of the weight of the vehicle.
4. (Original) The method of claim 1, wherein the data comprises a value indicative of the amount of at least one chemical composition emitted by the vehicle.
5. (Original) The method of claim 1, wherein the data comprises a vehicle identification number.
6. (Original) The method of claim 1, wherein the data comprises an indicator that the vehicle is capable of using fuel which is at least partially comprised of a renewable resource.
7. (Original) The method of claim 1, wherein the data comprises an indicator that the vehicle is a hybrid gasoline/electric vehicle.
8. (Original) The method of claim 1, wherein the step of determining a per unit price of fuel sold to said vehicle further comprises searching a lookup table for vehicle specific data in order to determine a per unit price for fuel for the vehicle.
9. (Original) The method of claim 1, wherein the step of determining a per unit price of fuel sold to said vehicle further comprises use of an equation which utilizes said vehicle specific data to at least partially determine the per unit price for the fuel sold to the vehicle.
10. (Original) The method of claim 1, wherein the step of determining a per unit price of fuel sold to said vehicle further comprises the use of a database query which utilizes said vehicle specific data to at least partially determine the per unit price for the fuel sold to the vehicle.

11. (Original) The method of claim 1, wherein the step of transmitting said data uses wireless means.
12. (Original) The method of claim 11, further comprising a step of periodically verifying that the fuel being delivered is being pumped into the vehicle from which the vehicle specific data was used to determine the per unit price.
13. (Original) The method of claim 12, further comprising a step wherein a computer in the vehicle receives information on fuel level in a fuel tank in the vehicle and periodically transmits said fuel level or a rate of change of said fuel level to the fuel pump computer; said fuel pump computer using said transmitted fuel level or said rate of change of fuel level to verify that the per unit price is correct for the vehicle being fueled.
14. (Original) The method of claim 1, wherein the step of transmitting said data from the vehicle is by means of an electrical coupling comprising a signaling cable, a plug at an end of the signaling cable, and a jack on the vehicle to be fueled; said jack being electrically coupled to a device containing said data in the vehicle.
15. (Original) The method of claim 1, wherein the step of transmitting said data from the vehicle is by means of a magnetic transducer placed on a portion of a nozzle which is inserted into a fuel filler pipe on the vehicle; said magnetic transducer reading the vehicle data from one or more encoded magnetic strips situated in a portion of the fuel filler pipe through which the magnetic transducer passes; and wherein said data received by the fuel pump computer travels over a signaling cable between said magnetic transducer and said fuel pump computer.
16. (Original) The method of claim 15, further comprising a step wherein if fueling is suspended for a predetermined time, said nozzle must be reinserted past said encoded magnetic strips in order to resume receiving fuel at the determined per unit price.
17. (Original) The method of claim 1, wherein the step of transmitting said data from the vehicle is done by optically reading a bar code; said bar code being physically located inside the fuel filler pipe and read by a light source and a light receptor on the fuel nozzle; and wherein said data travels via a signaling cable between said light receptor and said fuel pump computer.
18. (Original) The method of claim 1, wherein the step of transmitting said data from said vehicle is by means of infrared data transmission sent from a sending unit on the vehicle to a receiving unit on the fuel nozzle.

19. (Original) The method of claim 1, further comprising the step of displaying to the customer the per unit fuel price.

20. (Original) The method of claim 19, further comprising the step of displaying an explanation of how the per unit fuel price was determined.

21. (Original) The method of claim 1, wherein the step of storing said vehicle specific data is performed under the direction of a regulatory agency after the vehicle has been purchased by the customer.

22. (Original) An apparatus for selling fuel to a vehicle, comprising:

a storage device for storing vehicle specific data within said vehicle;
a transmitter for transmitting said data to a fuel vendor; and
a fuel pump computer, which determines a per unit price for the fuel, using,
at least in part, said data.

23. (Original) The apparatus of claim 22, wherein the storage device is a semiconductor memory.

24. (Original) The apparatus of claim 22, wherein the storage device is comprised of magnetic material.

25. (Original) The apparatus of claim 24, wherein the magnetic material is positioned inside a fuel filler pipe on said vehicle, and is of a substantially cylindrical or partially cylindrical shape.

26. (Original) The apparatus of claim 25, further comprising a substantially cylindrical or partially cylindrical collar positioned and affixed between said magnetic material and the inside wall of said fuel filler pipe; said collar being made of a nonferrous material and of suitable thickness to prevent shunting of magnetic fields of said magnetic material by said fuel filler pipe.

27. (Original) The apparatus of claim 26, further comprising a magnetic transducer affixed to a fuel nozzle; said transducer capable of reading information encoded upon said magnetic material as said nozzle is inserted into said fuel filler pipe and past the magnetic material.

28. (Original) The apparatus of claim 22, wherein the storage device is an optically readable bar code.

29. (Original) The apparatus of claim 28, wherein the bar code is printed, engraved, or painted on the inside wall of a fuel filler pipe on said vehicle.

30. (Original) The apparatus of claim 29, further comprising a light source and a light receptor on a fuel nozzle; said light source capable of illuminating said bar code, and said receptor capable of detecting and reading said bar code as said nozzle passes the bar code as said nozzle is inserted into said fuel filler pipe.

31. (Original) The apparatus of claim 28, wherein the bar code is printed, engraved, or painted on a substantially cylindrical or partially cylindrical collar which is positioned and affixed inside a fuel filler pipe on said vehicle.

32. (Original) The apparatus of claim 31, further comprising a light source and a light receptor on a fuel nozzle; said light source capable of illuminating said bar code, and said receptor capable of detecting and reading said bar code as said nozzle passes the bar code as said nozzle is inserted into said fuel filler pipe.

33. (Original) The apparatus of claim 22, wherein said transmitter is wireless.

34. (Original) The apparatus of claim 33, further comprising a fuel sensor in the vehicle; a computer in the vehicle which is electrically coupled to and which periodically reads fuel quantity information from said fuel sensor; said computer in the vehicle further being coupled to a wireless interface unit which controls a first wireless unit in said vehicle; said first wireless unit being in communication with a second wireless unit on a fuel pump; said second wireless unit being electrically coupled to said fuel pump computer; said fuel quantity information transmitted from said computer in the vehicle through said wireless interface unit to said first wireless unit, and from said first wireless unit to said second wireless unit, and from said second wireless unit to said fuel pump computer.

35. (Original) The apparatus of claim 22, wherein the transmitter comprises an infrared transmitter on said vehicle and an infrared receptor attached to a fuel pump nozzle.

36. (Original) The apparatus of claim 22, wherein said fuel pump computer contains a program in a memory; said program, when executed by said fuel pump computer, being capable of determining a per unit price of fuel sold to the vehicle, using some or all of said vehicle specific data, and at least one rule authorized by a regulatory agency.



UNITED STATES
PATENT AND
TRADEMARK OFFICE

*General Information
Concerning Patents*

General Information Concerning Patents

■ Functions of the United States Patent and Trademark Office	1
■ Purpose of this Booklet	1
■ What Are Patents, Trademarks, Servicemarks, and Copyrights?	1
■ What Is a Patent?	1
■ What Is a Trademark or Servicemark?	2
■ What Is a Copyright?	2
■ Patent Laws	2
■ What Can Be Patented	3
■ Novelty and Non-Obvious, Conditions for Obtaining a Patent	3
■ The United States Patent and Trademark Office	4
■ General Information and Correspondence	4
■ Library, Search Room Searches and Patent and Trademark Depository Libraries	5
■ Attorneys and Agents	6
■ Disclosure Document Program	7
■ Provisional Application for Patent	8
■ Patent and Trademark Depository Libraries (PTDLs)	8
■ Contacts	8
■ Who May Apply for a Patent	9
■ Application for Patent	9
■ Non-Provisional Application for a Patent	9
■ Provisional Application for a Patent	10
■ Publication of Patent Applications	11
■ Oath or Declaration, Signature	11
■ Filing Fees	12
■ Specification (Description and Claims)	12

■ Drawing	14
■ § 1.84 Standards for drawings	14
■ Models, Exhibits And Specimens	18
■ Examination of Applications and Proceedings in the United States Patent and Trademark Office	18
■ Restrictions	19
■ Office Action	19
■ Applicant's Reply	19
■ Final Rejection	19
■ Amendments to Application	20
■ Time for Reply and Abandonment	21
■ Appeal to the Board of Patent Appeals and Interferences and to the Courts	21
■ Interferences	21
■ Allowance and Issue of Patent	22
■ Patent Term Extension and Adjustment	22
■ Nature of Patent and Patent Rights	23
■ Maintenance Fees	24
■ Correction of Patents	24
■ Assignments and Licenses	24
■ Recording of Assignments	25
■ Joint Ownership	25
■ Infringement of Patents	25
■ Patent Marking and Patent Pending	26
■ Design Patents	26
■ Plant Patents	26
■ Treaties and Foreign Patents	27
■ Foreign Applicants for United States Patents	28
■ Frequently-Asked Questions about Patents	30

GENERAL INFORMATION CONCERNING PATENTS

Functions of the United States Patent and Trademark Office

The United States Patent and Trademark Office (USPTO or Office) is an agency of the U.S. Department of Commerce. The role of the USPTO is to grant patents for the protection of inventions and to register trademarks. It serves the interest of inventors and businesses with respect to their inventions and corporate products, and service identifications. It also advises and assists the President of the United States, the Secretary of Commerce, the bureaus and offices of the Department of Commerce and other agencies of the government in matters involving all domestic and global aspects of "intellectual property." Through the preservation, classification, and dissemination of patent information, the Office promotes the industrial and technological progress of the nation and strengthens the economy.

In discharging its patent related duties, the USPTO examines applications and grants patents on inventions when applicants are entitled to them; it publishes and disseminates patent information, records assignments of patents, maintains search files of U.S. and foreign patents, and maintains a search room for public use in examining issued patents and records. The Office supplies copies of patents and official records to the public. It provides training to practitioners and their applicants as to requirements of the patent statutes and regulations, and it publishes the Manual of Patent Examining Procedure to elucidate these. Similar functions are performed relating to trademarks. By protecting intellectual endeavors and encouraging technological progress, USPTO seeks to preserve the United States' technological edge, which is key to our current and future competitiveness. The USPTO also disseminates patent and trademark information that promotes an understanding of intellectual property

protection and facilitates the development and sharing of new technologies worldwide.

Purpose of this Booklet

The purpose of this information file is to give users some general information about patents and the operations of the USPTO. It attempts to answer many of the questions commonly asked of the Office but is not intended to be a comprehensive textbook on patent law or a guide for the patent attorney. It is hoped that this information will be useful to inventors and prospective applicants for patents, to students, and to others who may be interested in patents by giving them a brief general introduction to the subject.

Additional information may be obtained from the publications listed under the sections "Publications of the Patent and Trademark Office" and "General Information and Correspondence." The USPTO does not publish any textbooks on patent law, but a number of such works for the specialist and for the general reader have been published by private concerns.

What Are Patents, Trademarks, Servicemarks, and Copyrights?

Some people confuse patents, copyrights, and trademarks. Although there may be some similarities among these kinds of intellectual property protection, they are different and serve different purposes.

What Is a Patent?

A patent for an invention is the grant of a property right to the inventor, issued by the United States Patent

and Trademark Office. Generally, the term of a new patent is 20 years from the date on which the application for the patent was filed in the United States or, in special cases, from the date an earlier related application was filed, subject to the payment of maintenance fees. U.S. patent grants are effective only within the United States, U.S. territories, and U.S. possessions. Under certain circumstances, patent term extensions or adjustments may be available.

The right conferred by the patent grant is, in the language of the statute and of the grant itself, "the right to exclude others from making, using, offering for sale, or selling" the invention in the United States or "importing" the invention into the United States. What is granted is not the right to make, use, offer for sale, sell or import, but the right to exclude others from making, using, offering for sale, selling or importing the invention. Once a patent is issued, the patentee must enforce the patent without aid of the USPTO.

There are three types of patents:

Utility patents may be granted to anyone who invents or discovers any new and useful process, machine, article of manufacture, or compositions of matter, or any new useful improvement thereof;

Design patents may be granted to anyone who invents a new, original, and ornamental design for an article of manufacture; and

Plant patents may be granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plants.

What Is a Trademark or Servicemark?

A trademark is a word, name, symbol, or device that is used in trade with goods to indicate the source of the goods and to distinguish them from the goods of others. A servicemark is the same as a trademark except that it identifies and distinguishes the source of a service rather than a product. The terms "trademark" and "mark" are commonly used to refer to both trademarks and servicemarks.

Trademark rights may be used to prevent others from using a confusingly similar mark, but not to prevent others from making the same goods or from selling the same goods or services under a clearly different mark. Trademarks which are used in interstate or

foreign commerce may be registered with the USPTO. The registration procedure for trademarks and general information concerning trademarks is described in a separate pamphlet entitled "Basic Facts about Trademarks."

What Is a Copyright?

Copyright is a form of protection provided to the authors of "original works of authorship" including literary, dramatic, musical, artistic, and certain other intellectual works, both published and unpublished. The 1976 Copyright Act generally gives the owner of copyright the exclusive right to reproduce the copyrighted work, to prepare derivative works, to distribute copies or phonorecords of the copyrighted work, to perform the copyrighted work publicly, or to display the copyrighted work publicly.

The copyright protects the form of expression rather than the subject matter of the writing. For example, a description of a machine could be copyrighted, but this would only prevent others from copying the description; it would not prevent others from writing a description of their own or from making and using the machine. Copyrights are registered by the *Copyright Office of the Library of Congress*.

PATENT LAWS

The Constitution of the United States gives Congress the power to enact laws relating to patents, in Article I, section 8, which reads "Congress shall have power . . . to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." Under this power Congress has from time to time enacted various laws relating to patents. The first patent law was enacted in 1790. The patent laws underwent a general revision which was enacted July 19, 1952, and which came into effect January 1, 1953. It is codified in Title 35, United States Code. Additionally, on November 29, 1999, Congress enacted the American Inventors Protection Act of 1999 (AIPA), which further revised the patent laws. See Public Law 106-113, 113 Stat. 1501 (1999).

The patent law specifies the subject matter for which a patent may be obtained and the conditions for patentability. The law establishes the United States

Patent and Trademark Office to administer the law relating to the granting of patents and contains various other provisions relating to patents.

WHAT CAN BE PATENTED

The patent law specifies the general field of subject matter that can be patented and the conditions under which a patent may be obtained.

In the language of the statute, any person who "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent," subject to the conditions and requirements of the law. The word "process" is defined by law as a process, act or method, and primarily includes industrial or technical processes. The term "machine" used in the statute needs no explanation. The term "manufacture" refers to articles that are made, and includes all manufactured articles. The term "composition of matter" relates to chemical compositions and may include mixtures of ingredients as well as new chemical compounds. These classes of subject matter taken together include practically everything that is made by man and the processes for making the products.

The Atomic Energy Act of 1954 excludes the patenting of inventions useful solely in the utilization of special nuclear material or atomic energy for atomic weapons.

The patent law specifies that the subject matter must be "useful." The term "useful" in this connection refers to the condition that the subject matter has a useful purpose and also includes operativeness, that is, a machine which will not operate to perform the intended purpose would not be called useful, and therefore would not be granted a patent.

Interpretations of the statute by the courts have defined the limits of the field of subject matter that can be patented, thus it has been held that the laws of nature, physical phenomena, and abstract ideas are not patentable subject matter.

A patent cannot be obtained upon a mere idea or suggestion. The patent is granted upon the new machine, manufacture, etc., as has been said, and not

upon the idea or suggestion of the new machine. A complete description of the actual machine or other subject matter for which a patent is sought is required.

NOVELTY AND NON-OBVIOUSNESS, CONDITIONS FOR OBTAINING A PATENT

In order for an invention to be patentable it must be new as defined in the patent law, which provides that an invention cannot be patented if: "(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent," or "(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the application for patent in the United States . . ."

If the invention has been described in a printed publication anywhere in the world, or if it has been in public use or on sale in this country before the date that the applicant made his/her invention, a patent cannot be obtained. If the invention has been described in a printed publication anywhere, or has been in public use or on sale in this country more than one year before the date on which an application for patent is filed in this country, a patent cannot be obtained. In this connection it is immaterial when the invention was made, or whether the printed publication or public use was by the inventor himself/herself or by someone else. If the inventor describes the invention in a printed publication or uses the invention publicly, or places it on sale, he/she must apply for a patent before one year has gone by, otherwise any right to a patent will be lost. The inventor must file on the date of public use or disclosure, however, in order to preserve patent rights in many foreign countries.

Even if the subject matter sought to be patented is not exactly shown by the prior art, and involves one or more differences over the most nearly similar thing already known, a patent may still be refused if the differences would be obvious. The subject matter sought to be patented must be sufficiently different from what has been used or described before that it may be said to be nonobvious to a person having ordinary skill in the area of

technology related to the invention. For example, the substitution of one color for another, or changes in size, are ordinarily not patentable.

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Congress established the United States Patent and Trademark Office (USPTO or Office) to issue patents on behalf of the government. The Patent Office as a distinct bureau dates from the year 1802 when a separate official in the Department of State who became known as "Superintendent of Patents" was placed in charge of patents. The revision of the patent laws enacted in 1836 reorganized the Patent Office and designated the official in charge as Commissioner of Patents. The Patent Office remained in the Department of State until 1849 when it was transferred to the Department of Interior. In 1925 it was transferred to the Department of Commerce where it is today. In 1975, the name of the Patent Office was changed to the Patent and Trademark Office.

The United States Patent and Trademark Office administers the patent laws as they relate to the granting of patents for inventions, and performs other duties relating to patents. It examines applications for patents to determine if the applicants are entitled to patents under the law and grants the patents when they are so entitled; it publishes issued patents, most patent applications filed on or after November 29, 2000, at 18 months from the earliest filing date, and various publications concerning patents; records assignments of patents; maintains a search room for the use of the public to examine issued patents and records; and supplies copies of records and other papers, and the like. Similar functions are performed with respect to the registration of trademarks. The USPTO has no jurisdiction over questions of infringement and the enforcement of patents, nor over matters relating to the promotion or utilization of patents or inventions.

The head of the Office is the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office (Director). The Director's staff includes the Deputy Under Secretary of Commerce and Deputy Director of the USPTO, the Commissioner for Patents, the

Commissioner for Trademarks, and other officials. As head of the Office, the Director superintends or performs all duties respecting the granting and issuing of patents and the registration of trademarks; exercises general supervision over the entire work of the USPTO; prescribes the rules, subject to the approval of the Secretary of Commerce, for the conduct of proceedings in the USPTO, and for recognition of attorneys and agents; decides various questions brought before the Office by petition as prescribed by the rules; and performs other duties necessary and required for the administration of the United States Patent and Trademark Office.

The work of examining applications for patents is divided among a number of examining technology centers (TC), each TC having jurisdiction over certain assigned fields of technology. Each TC is headed by group directors and staffed by examiners and support staff. The examiners review applications for patents and determine whether patents can be granted. An appeal can be taken to the Board of Patent Appeals and Interferences from their decisions refusing to grant a patent, and a review by the Director of the USPTO may be had on other matters by petition. The examiners also identify applications that claim the same invention and may initiate proceedings, known as interferences, to determine who was the first inventor.

In addition to the examining TCs, other offices perform various services, such as receiving and distributing mail, receiving new applications, handling sales of printed copies of patents, making copies of records, inspecting drawings, and recording assignments. At present, the USPTO has over 6,000 employees, of whom about half are examiners and others with technical and legal training. Patent applications are received at the rate of over 300,000 per year. The Office receives over five million pieces of mail each year.

GENERAL INFORMATION AND CORRESPONDENCE

All business with the United States Patent and Trademark Office (USPTO or Office) should be transacted in writing and all correspondence relating to patent matters should be addressed to "COMMISSIONER FOR PATENTS,

WASHINGTON, D.C. 20231." If a special mail box is appropriate, the special mailbox should also be used. Mail properly addressed to different mail boxes should be mailed separately to ensure proper routing. For example, after final correspondence should be mailed to "Box AF, Commissioner for Patents, Washington DC 20231," and assignments should be mailed to "Box ASSIGNMENTS, DIRECTOR- U.S. PATENT AND TRADEMARK OFFICE, WASHINGTON D.C. 20231." Correspondents should be sure to include their full return addresses, including zip codes. The principal location of the USPTO is Crystal Plaza 3, 2021 Jefferson Davis Highway, Arlington, Virginia. The personal presence of applicants at the USPTO is unnecessary.

Applicants and attorneys are required to conduct their business with decorum and courtesy. Papers presented in violation of this requirement will be returned.

Separate letters (but not necessarily in separate envelopes) should be written for each distinct subject of inquiry, such as assignments, payments, orders for printed copies of patents, orders for copies of records, and requests for other services. None of these inquiries should be included with letters responding to Office actions in applications.

When a letter concerns a patent application, the correspondent must include the application number, filing date, and Art Unit number. When a letter concerns a patent, it must include the name of the patentee, the title of the invention, the patent number, and the date of issue.

An order for a copy of an assignment must give the book and page, or reel and frame of the record, as well as the name of the inventor; otherwise, an additional charge is made for the time consumed in making the search for the assignment.

Applications for patents, which are not published or issued as patents, are not generally open to the public, and no information concerning them is released except on written authority of the applicant, his/her assignee, or his/her attorney, or when necessary to the conduct of the business of the USPTO. Patent application publications and patents and related records, including records of any decisions, the

records of assignments other than those relating to assignments of unpublished patent applications, patent applications that are relied upon for priority in a patent application publication or patent, books, and other records and papers in the Office are open to the public. They may be inspected in the USPTO Search Room or copies may be ordered.

The Office cannot respond to inquiries concerning the novelty and patentability of an invention prior to the filing of an application; give advice as to possible infringement of a patent; advise of the propriety of filing an application; respond to inquiries as to whether, or to whom, any alleged invention has been patented; act as an expounder of the patent law or as counselor for individuals, except in deciding questions arising before it in regularly filed cases. Information of a general nature may be furnished either directly or by supplying or calling attention to an appropriate publication.

LIBRARY, SEARCH ROOM SEARCHES AND PATENT AND TRADEMARK DEPOSITORY LIBRARIES

The Scientific and Technical Information Center of the United States Patent and Trademark Office located at Crystal Plaza 3, 2C01, 2021 Jefferson Davis Highway, Arlington, VA, has available for public use over 120,000 volumes of scientific and technical books in various languages, about 90,000 bound volumes of periodicals devoted to science and technology, the official journals of 77 foreign patent organizations, and over 40 million foreign patents on paper, microfilm, microfiche, and CD-ROM. The Scientific and Technical Information Center is open to the public from 8:30 a.m. to 5:00 p.m., Monday through Friday except federal holidays.

The Patent Search Room located at Crystal Plaza 3, 1A01, 2021 Jefferson Davis Highway, Arlington, VA, is where the public may search and examine U.S. patents granted since 1790. Patents are arranged according to the U.S. Patent Classification System of over 400 classes and over 136,000 subclasses. By searching in these classified groupings of patents, it is possible to determine, before actually filing an application, whether an invention has been

anticipated by a U.S. patent, and it is also possible to obtain the information contained in patents relating to any field of endeavor. The Patent Search Room contains a set of U.S. patents arranged in numerical order and a complete set of the *Official Gazette*.

A Files Information Room also is maintained where the public may inspect the records and files of issued patents and other open records. Applicants, their attorneys or agents, and the general public are not entitled to use the records and files in the examiners' rooms. The Patent Search Room is open from 8 a.m. to 8 p.m. Monday through Friday except on federal holidays.

Many inventors attempt to make their own search of the prior patents and publications before applying for a patent. This may be done in the Patent Search Room of the USPTO, and in libraries, located throughout the United States, which have been designated as Patent and Trademark Depository Libraries (PTDLs). An inventor may make a preliminary search through the U.S. patents and publications to discover if the particular invention or one similar to it has been shown in the prior patent. An inventor may also employ patent attorneys or agents to perform the preliminary search. This search may not be as complete as that made by the USPTO during the examination of an application, but only serves, as its name indicates, a preliminary purpose. For this reason, the patent examiner may, and often does, reject claims in an application on the basis of prior patents or publications not found in the preliminary search.

Those who cannot come to the Patent Search Room may order from the USPTO copies of lists of original patents or of cross-referenced patents contained in the subclasses comprising the field of search, or may inspect and obtain copies of the patents at a Patent and Trademark Depository Library. The PTDLs receive current issues of U.S. patents and maintain collections of earlier issued patent and trademark information. The scope of these collections varies from library to library, ranging from patents of only recent years to all or most of the patents issued since 1790.

These patent collections are open to public use. Each of the PTDLs, in addition, offers the publications of the U.S. Patent Classification System (e.g., Manual of Classification, Index to the U.S. Patent

Classification System, Classification Definitions, etc.) and other patent documents and forms, and provides technical staff assistance in their use to aid the public in gaining effective access to information contained in patents. The collections are organized in patent number sequence.

Available in all PTDLs is the Cassis CD-ROM system. With various files, it permits the effective identification of appropriate classifications to search, provides numbers of patents assigned to a classification to facilitate finding the patents in a numerical file of patents, provides the current classification(s) of all patents, permits word searching on classification titles, and on abstracts, and provides certain bibliographic information on more recently issued patents.

Facilities for making paper copies from microfilm, the paper bound volumes or CD-ROM are generally provided for a fee.

Due to variations in the scope of patent collections among the PTDLs and in their hours of service to the public, anyone contemplating the use of the patents at a particular library is advised to contact that library, in advance, about its collection, services, and hours, so as to avert possible inconvenience. For a complete list of PTDLs, refer to the USPTO Web site at www.uspto.gov.

ATTORNEYS AND AGENTS

The preparation of an application for patent and the conducting of the proceedings in the United States Patent and Trademark Office (USPTO or Office) to obtain the patent is an undertaking requiring the knowledge of patent law and rules and Office practice and procedures, as well as knowledge of the scientific or technical matters involved in the particular invention.

Inventors may prepare their own applications and file them in the USPTO and conduct the proceedings themselves, but unless they are familiar with these matters or study them in detail, they may get into considerable difficulty. While a patent may be obtained in many cases by persons not skilled in this work, there would be no assurance that the patent obtained would adequately protect the particular invention.

Most inventors employ the services of registered patent attorneys or patent agents. The law gives the USPTO the power to make rules and regulations governing conduct and the recognition of patent attorneys and agents to practice before the USPTO. Persons who are not recognized by the USPTO for this practice are not permitted by law to represent inventors before the USPTO. The USPTO maintains a register of attorneys and agents. To be admitted to this register, a person must comply with the regulations prescribed by the Office, which require a showing that the person is of good moral character and of good repute and that he/she has the legal, and scientific and technical qualifications necessary to render applicants for patents a valuable service. Certain of these qualifications must be demonstrated by the passing of an examination. Those admitted to the examination must have a college degree in engineering or physical science or the equivalent of such a degree.

The USPTO registers both attorneys at law and persons who are not attorneys at law. The former persons are now referred to as "patent attorneys" and the latter persons are referred to as "patent agents." Both patent attorneys and patent agents are permitted to prepare an application for a patent and conduct the prosecution in the USPTO. Patent agents, however, cannot conduct patent litigation in the courts or perform various services which the local jurisdiction considers as practicing law. For example, a patent agent could not draw up a contract relating to a patent, such as an assignment or a license, if the state in which he/she resides considers drafting contracts as practicing law.

Some individuals and organizations that are not registered advertise their services in the fields of patent searching and invention marketing and development. Such individuals and organizations cannot represent inventors before the USPTO. They are not subject to USPTO discipline, and the Office cannot assist inventors in dealing with them.

The USPTO cannot recommend any particular attorney or agent, or aid in the selection of an attorney or agent, as by stating, in response to inquiry that a named patent attorney, agent, or firm, is "reliable" or "capable." The USPTO publishes a directory of all registered patent attorneys and agents who have indicated their availability to accept new

clients, arranged by states, cities, and foreign countries. The Directory may be purchased in paper form from the Government Printing Office or from the USPTO's Office of Electronic Information on the Cassis ASSIST CD-ROM disc. It is also available on the USPTO Web site at <http://www.uspto.gov/web/offices/dcom/olia/oed/roster/index.html>.

The telephone directories of most large cities have, in the classified section, a heading for patent attorneys under which those in that area are listed. Many large cities have associations of patent attorneys.

In employing a patent attorney or agent, the inventor executes a power of attorney or authorization of agent, which must be filed in the USPTO and is usually a part of the application papers. When a registered attorney or agent has been appointed, the Office does not communicate with the inventor directly but conducts the correspondence with the attorney or agent since he/she is acting for the inventor thereafter although the inventor is free to contact the USPTO concerning the status of his/her application. The inventor may remove the attorney or agent by revoking the power of attorney or authorization of agent.

The USPTO has the power to disbar, or suspend from practicing before it, persons guilty of gross misconduct, etc., but this can only be done after a full hearing with the presentation of clear and convincing evidence concerning the misconduct. The USPTO will receive and, in appropriate cases, act upon complaints against attorneys and agents. The fees charged to inventors by patent attorneys and agents for their professional services are not subject to regulation by the USPTO. Definite evidence of overcharging may afford basis for USPTO action, but the Office rarely intervenes in disputes concerning fees.

Disclosure Document Program

A service provided by the United States Patent and Trademark Office (USPTO or Office) is the acceptance and preservation for two years of "Disclosure Documents" as evidence of the date of conception of an invention.

A paper disclosing an invention (called a Disclosure Document) and signed by the inventor or inventors

may be forwarded to the USPTO by the inventor (or by any one of the inventors when there are joint inventors), by the owner of the invention, or by the attorney or agent of the inventor(s) or owner. The Disclosure Document will be retained for two years, and then be destroyed unless it is referred to in a separate letter in a related patent application filed within those two years.

THE DISCLOSURE DOCUMENT IS NOT A PATENT APPLICATION. THE DATE OF ITS RECEIPT IN THE USPTO WILL NOT BECOME THE EFFECTIVE FILING DATE OF ANY PATENT APPLICATION SUBSEQUENTLY FILED.

These documents will be kept in confidence by the USPTO without publication in accordance with 35 U.S.C. 122(b), effective November 29, 2000.

This program does not diminish the value of the conventional, witnessed, permanently bound, and page-numbered laboratory notebook or notarized records as evidence of conception of an invention, but it should provide a more credible form of evidence than that provided by the mailing of a disclosure to oneself or another person by registered mail.

WARNING to Inventors

The two-year retention period is not a "grace period" during which the inventor can wait to file his or her patent application without possible loss of benefits. It must be recognized that, in establishing priority of invention, an affidavit or testimony referring to a Disclosure Document must usually also establish diligence in completing the invention or in filing the patent application after the filing of the Disclosure Document.

Inventors are also reminded that any public use or sale in the United States or publication of the invention anywhere in the world more than one year prior to the filing of a patent application on that invention will prohibit the granting of an U. S. patent on it. Foreign patent laws in this regard may be much more restrictive than U.S. laws.

For more information about Disclosure Documents, please visit the USPTO Web site at <http://www.uspto.gov/>.

Provisional Application for Patent

Inventors also have the option of filing a *Provisional Application for Patent*. Provisional applications are described in more detail below. To receive more information on provisional applications, please visit the *USPTO Web site* or request a print brochure by calling 800-786-9199 or 703-308-4357.

Patent and Trademark Depository Libraries (PTDLs)

Two *Partnership Patent and Trademark Depository Libraries* (PTDLs) participate as USPTO's authorized "agents" in accepting documents filed under the Disclosure Document Program. This service provides a completed transaction on-site, eliminating the wait for USPTO notification of acceptance. The documents receive an identifying number and date at the time of receipt by the PTDL. Original documents are sent to the USPTO for processing and retention.

Great Lakes Patent and Trademark Center (GLPTC) at the Detroit Public Library

5201 Woodward Avenue (second level)
Detroit, MI 48202
Telephone: 313-833-3379 or 800-547-0619
Fax: 313-833-6481

South Central Intellectual Property Partnership at Rice University (SCIPPR)

Fondren Library - MS220
6100 South Main Street
Houston, TX 77521-1892
Telephone: 713-285-5196
Fax: 713-737-6341

A list of *Patent and Trademark Depository Libraries* can be found in the *Official Gazette* and on the USPTO Web site. Collections of patents and patent-related reference materials are available at the nationwide network of PTDLs. Contact the PTDL prior to your visit to learn about its collections, services, and hours.

Contacts

The Office of Independent Inventor Programs (OIIP) was established in March 1999 in order to meet the special needs of independent inventors. The OIIP

establishes new mechanisms to better disseminate information about the patent and trademark process and to foster regular communication between the USPTO and independent inventors.

A section of the USPTO's Web site is devoted to independent inventors (site is entitled "Independent Inventor Resources") and offers educational material covering all aspects of the patent and trademark process. The Web site also endeavors to educate independent inventors about fraudulent invention development and marketing firms and the scams that may affect these inventors and offers tips and warning signs on avoiding these scams. The site also publishes complaints against these firms and any responses received from them. The site further provides links to other USPTO sites, as well as links to other federal agencies.

The OIIP also offers educational and outreach programs, either alone or in conjunction with local Patent and Trademark Depository Libraries, independent inventor organizations, and Small Business Development Centers. These programs cover all aspects of the patent and trademark filing and prosecution process and can be arranged for your group or organization by contacting OIIP at the number or address listed below.

Write:
Director-
United States Patent and Trademark Office
Office of Independent Inventor Programs
Box 24
Washington, D.C. 20231
Telephone: 703-306-5568
Fax: 703-306-5570
E-mail: independentinventor@uspto.gov

The General Information Services Division (GISD) provides the primary point of contact to the independent inventor community and the general public for general information about filing a disclosure document, a provisional patent application, or a regular, non-provisional patent application.

GISD also offers copies of this brochure and all other USPTO brochures.

For additional information on the patent process, telephone the USPTO Information Line and

Patent Assistance Center at:
Telephone 1-800- PTO-9199
Fax: 703-305-7786
TTY: 703-305-7785

USPTO's home page is <http://www.uspto.gov>.

WHO MAY APPLY FOR A PATENT

According to the law, only the inventor may apply for a patent, with certain exceptions. If a person who is not the inventor should apply for a patent, the patent, if it were obtained, would be invalid. The person applying in such a case who falsely states that he/she is the inventor would also be subject to criminal penalties. If the inventor is dead, the application may be made by legal representatives, that is, the administrator or executor of the estate. If the inventor is insane, the application for patent may be made by a guardian. If an inventor refuses to apply for a patent or cannot be found, a joint inventor or, if there is no joint inventor available, a person having a proprietary interest in the invention may apply on behalf of the non-signing inventor.

If two or more persons make an invention jointly, they apply for a patent as joint inventors. A person who makes only a financial contribution is not a joint inventor and cannot be joined in the application as an inventor. It is possible to correct an innocent mistake in erroneously omitting an inventor or in erroneously naming a person as an inventor.

Officers and employees of the United States Patent and Trademark Office are prohibited by law from applying for a patent or acquiring, directly or indirectly, except by inheritance or bequest, any patent or any right or interest in any patent.

APPLICATION FOR PATENT

Non-Provisional Application for a Patent

A non-provisional application for a patent is made to the Commissioner for Patents and includes:

(1) A written document which comprises a specification (description and claims), and an oath or declaration;

(2) A drawing in those cases in which a drawing is necessary; and

(3) The filing fee. Applicant must determine that small entity status is appropriate before making an assertion of entitlement to small entity status and paying a small entity fee. Fees change each October. The fee schedule is posted on the USPTO Web site.

All application papers must be in the English language or a translation into the English language will be required along with the required fee set forth in 37 CFR 1.17(i). All application papers must be legibly written on only one side either by a typewriter or mechanical printer in permanent dark ink or its equivalent in portrait orientation on flexible, strong, smooth, non-shiny, durable and white paper.

The papers must be presented in a form having sufficient clarity and contrast between the paper and the writing to permit electronic reproduction. Each document in the application papers must all be the same size - either 21.0 cm by 29.7 cm (DIN size A4) or 21.6 cm by 27.9 cm (8 1/2 by 11 inches), with a top margin of at least 2.0 cm (3/4 inch), a left side margin of at least 2.5 cm (1 inch), a right side margin of at least 2.0 cm (3/4 inch) and a bottom margin of at least 2.0 cm (3/4 inch) with no holes made in the submitted papers. (The specification and drawings may be on A4 paper, and the preliminary amendment on 8 1/2 by 11 paper.) It is also required that the spacing on all papers be 1 1/2 or double-spaced and the application papers must be numbered consecutively (centrally located above or below the text) starting with page one.

The specification must conclude with a claim or claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as the invention. The portion of the application in which the applicant sets forth the claim or claims is an important part of the application, as it is the claims that define the scope of the protection afforded by the patent.

More than one claim may be presented provided they differ from each other. Claims may be presented in independent form (e.g. the claim stands by itself) or in dependent form, referring back to and further limiting another claim or claims in the same application. Any dependent claim which refers back

to more than one other claim is considered a "multiple dependent claim."

The application for patent is not forwarded for examination until all required parts, complying with the rules related thereto, are received. If any application is filed without all the required parts for obtaining a filing date (incomplete or defective), the applicant will be notified of the deficiencies and given a time period to complete the application filing (a surcharge may be required)—at which time a filing date as of the date of such a completed submission will be obtained by the applicant. If the omission is not corrected within a specified time period, the application will be returned or otherwise disposed of; the filing fee if submitted will be refunded less a handling fee as set forth in the fee schedule.

The filing fee and declaration or oath need not be submitted with the parts requiring a filing date. It is, however, desirable that all parts of the complete application be deposited in the Office together; otherwise each part must be signed and a letter must accompany each part, accurately and clearly connecting it with the other parts of the application. Failure to originally submit the declaration or filing fee will result in an incomplete application and the payment of a surcharge when these parts are later filed in response to a requirement by the Office.

All applications received in the USPTO are numbered in sequential order and the applicant will be informed of the application number and filing date by a filing receipt.

The filing date of an application for patent is the date on which a specification (including at least one claim) and any drawings necessary to understand the subject matter sought to be patented are received in the USPTO; or the date on which the last part completing the application is received in the case of a previously incomplete or defective application.

Provisional Application for a Patent

Since June 8, 1995, the USPTO has offered inventors the option of filing a provisional application for patent which was designed to provide a lower cost first patent filing in the United States and to give U.S. applicants parity with foreign applicants. Claims and

oath or declaration are NOT required for a provisional application. Provisional application provides the means to establish an early effective filing date in a patent application and permits the term "Patent Pending" to be applied in connection with the invention. Provisional applications may not be filed for design inventions.

The filing date of a provisional application is the date on which a written description of the invention, drawings if necessary, and the name of the inventor(s) are received in the USPTO. To be complete, a provisional application must also include the filing fee, and a cover sheet specifying that the application is a provisional application for patent. The applicant would then have up to 12 months to file a non-provisional application for patent as described above. The claimed subject matter in the later filed non-provisional application is entitled to the benefit of the filing date of the provisional application if it has support in the provisional application. If a provisional application is not filed in English, then any non-provisional application claiming priority to the provisional application must have a translation of the provisional application filed therein. See title 37, Code of Federal Regulations, Section 1.78(a)(5).

Provisional applications are NOT examined on their merits. A provisional application will become abandoned by the operation of law 12 months from its filing date. The 12-month pendency for a provisional application is not counted toward the 20-year term of a patent granted on a subsequently filed non-provisional application which relies on the filing date of the provisional application.

A surcharge is required for filing the basic filing fee or the cover sheet on a date later than the filing of the provisional application.

A brochure on Provisional Application for Patent is available by calling the USPTO General Information Services at 1-800-786-9199 or 703-308-4357 or by accessing USPTO's Web site at <http://www.uspto.gov/>.

Publication of Patent Applications

Publication of patent applications is required by the American Inventors Protection Act of 1999 for most

plant and utility patent applications filed on or after November 29, 2000. On filing of a plant or utility application on or after November 29, 2000, an applicant may request that the application not be published, but only if the invention has not been and will not be the subject of an application filed in a foreign country that requires publication 18 months after filing (or earlier claimed priority date) or under the Patent Cooperation Treaty. Publication occurs after expiration of an 18-month period following the earliest effective filing date or priority date claimed by an application. Following publication, the application for patent is no longer held in confidence by the Office and any member of the public may request access to the entire file history of the application.

As a result of publication, an applicant may assert provisional rights. These rights provide a patentee with the opportunity to obtain a reasonable royalty from a third party that infringes a published application claim provided actual notice is given to the third party by applicant, and a patent issues from the application with a substantially identical claim. Thus, damages for pre-patent grant infringement by another are now available.

OATH OR DECLARATION, SIGNATURE

The oath or declaration of the applicant (inventor) is required by law for a non-provisional application. The inventor must make an oath or declaration that he/she believes himself/herself to be the original and first inventor of the subject matter of the application, and he/she must make various other statements required by law and various statements required by the USPTO rules. If an application data sheet is filed, the USPTO rules require fewer statements in the oath or declaration. See title 37, Code of Federal Regulations, Sections 1.63 and 1.76. The oath must be sworn to by the inventor before a notary public or other officer authorized to administer oaths. A declaration may be used in lieu of an oath. Oaths or declarations are required for applications involving designs, plants, and utility inventions and for reissue applications. A declaration does not need to be notarized. When filing a continuation or divisional application a copy of an earlier-filed oath or declaration may be used. For applications (except

designs) filed prior to May 29, 2000, a continued prosecution application may be filed that requires neither a new oath or declaration, nor a copy of an oath or declaration from a prior application.

The oath or declaration must be signed by the inventor in person, or by the person entitled by law to make application on the inventor's behalf. A full first and last name with middle initial or name, if any, of each inventor are required. The mailing address and citizenship of each inventor are also required if an application data sheet is not used.

Forms for declarations are available by calling the USPTO General Information Services at 800-786-9199 or 703-308-4357 or by accessing USPTO Web site at <http://www.uspto.gov> under the section titled "PTO Forms." The papers in a complete application will not be returned for any purpose whatsoever, nor will the filing fee be returned. If applicants have not preserved copies of the papers, the Office will furnish copies for a fee.

FILING FEES

The filing fee of a non-provisional utility application (not design and plant applications) consists of a basic fee and additional fees. The basic fee entitles the applicant to present 20 claims, including not more than three in independent form. An additional fee is required for each claim in independent form which is in excess of three and an additional fee is required for each claim (whether independent or dependent) which is in excess of a total of 20 claims. If the application contains multiple dependent claims, additional fees are required.

If the owner of the invention is a small entity, (an independent inventor, a small business concern or a non-profit organization), the filing fees are reduced by half if small entity status is claimed. If small entity status is desired and appropriate, applicants should file a written assertion of small entity status in addition to paying the small entity filing fee. The written assertion may be a simple statement on a transmittal letter such as "Applicant claims small entity status." Applicants claiming small entity status should make an investigation as to whether small entity status is appropriate before claiming

such status. To avoid errors in the payment of fees, it is suggested that the table in the enclosed patent application transmittal letter be used to calculate the fee payment.

In calculating fees, a claim is singularly dependent if it incorporates by reference a single preceding claim that may be an independent or dependent claim. A multiple dependent claim or any claim depending therefrom shall be considered as separate dependent claims in accordance with the number of claims to which reference is made.

The law also provides for the payment of additional fees on presentation of additional claims after the application is filed. When an amendment is filed which presents additional claims over the total number already paid for, or additional independent claims over the number of independent claims already accounted for, it must be accompanied by any additional fees due.

Fees are subject to change in October of each year.

SPECIFICATION (DESCRIPTION AND CLAIMS)

The following order of arrangement should be observed in framing the application:

- (a) Application transmittal form.
- (b) Fee transmittal form.
- (c) Application Data Sheet.
- (d) Specification.
- (e) Drawings.
- (f) Oath or declaration.

The specification should have the following sections, in order:

- (1) Title of the Invention.
- (2) Cross Reference to related applications (if any). (Related applications may be listed on an application data sheet, either instead of or together with being listed in the specification.)
- (3) Statement of federally sponsored research/development (if any).
- (4) Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on a compact disc and an

incorporation by reference of the material on the compact disc including duplicates and the files on each compact disc shall be specified.

- (5) Background of the Invention.
- (6) Brief Summary of the Invention.
- (7) Brief description of the several views of the drawing (if any).
- (8) Detailed Description of the Invention.
- (9) Claim or claims.
- (10) Abstract of the disclosure.
- (11) Sequence listing (if any).

The specification must include a written description of the invention and of the manner and process of making and using it, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the technological area to which the invention pertains, or with which it is most nearly connected, to make and use the same.

The specification must set forth the precise invention for which a patent is solicited, in such manner as to distinguish it from other inventions and from what is old. It must describe completely a specific embodiment of the process, machine, manufacture, composition of matter, or improvement invented, and must explain the mode of operation or principle whenever applicable. The best mode contemplated by the inventor for carrying out the invention must be set forth.

In the case of an improvement, the specification must particularly point out the part or parts of the process, machine, manufacture, or composition of matter to which the improvement relates, and the description should be confined to the specific improvement and to such parts as necessarily cooperate with it or as may be necessary to a complete understanding or description of it.

The title of the invention, which should be as short and specific as possible (no more than 500 characters), should appear as a heading on the first page of the specification, if it does not otherwise appear at the beginning of the application. A brief abstract of the technical disclosure in the specification including that which is new in the art to which the invention pertains, must be set forth on a separate page immediately following the claims. The abstract should be in the form of a single paragraph

of 150 words or less, under the heading "Abstract of the Disclosure."

A brief summary of the invention indicating its nature and substance, which may include a statement of the object of the invention should precede the detailed description. The summary should be commensurate with the invention as claimed and any object recited should be that of the invention as claimed.

When there are drawings, there shall be a brief description of the several views of the drawings, and the detailed description of the invention shall refer to the different views by specifying the numbers of the figures, and to the different parts by use of reference numerals.

The specification must conclude with a claim or claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as the invention. The portion of the application in which the applicant sets forth the claim or claims is an important part of the application, as it is the claims that define the scope of the protection afforded by the patent and which questions of infringement are judged by the courts.

More than one claim may be presented provided they differ substantially from each other and are not unduly multiplied. One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application. Any dependent claim which refers back to more than one other claim is considered a "multiple dependent claim."

Multiple dependent claims shall refer to such other claims in the alternative only. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. Claims in dependent form shall be construed to include all of the limitations of the claim incorporated by reference into the dependent claim. A multiple dependent claim shall be construed to incorporate all the limitations of each of the particular claims in relation to which it is being considered.

The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that

the meaning of the terms in the claims may be ascertainable by reference to the description.

DRAWING

The applicant for a patent will be required by law to furnish a drawing of the invention whenever the nature of the case requires a drawing to understand the invention. However, the Director may require a drawing where the nature of the subject matter admits of it; this drawing must be filed with the application. This includes practically all inventions except compositions of matter or processes, but a drawing may also be useful in the case of many processes.

The drawing must show every feature of the invention specified in the claims, and is required by the Office rules to be in a particular form. The Office specifies the size of the sheet on which the drawing is made, the type of paper, the margins, and other details relating to the making of the drawing. The reason for specifying the standards in detail is that the drawings are printed and published in a uniform style when the patent issues, and the drawings must also be such that they can be readily understood by persons using the patent descriptions.

No names or other identification will be permitted within the "sight" of the drawing, and applicants are expected to use the space above and between the hole locations to identify each sheet of drawings. This identification may consist of the attorney's name and docket number or the inventor's name and application number and may include the sheet number and the total number of sheets filed (for example, "sheet 2 of 4"). The following rule, reproduced from title 37 of the Code of Federal Regulations, relates to the standards for drawings:

§ 1.84 Standards for drawings.

(a) Drawings. There are two acceptable categories for presenting drawings in utility and design patent applications:

(1) Black ink. Black and white drawings are normally required. India ink, or its equivalent that secures solid black lines, must be used for drawings, or

(2) Color. On rare occasions, color drawings may be necessary as the only practical medium by which to disclose the subject matter sought to be patented in a utility or design patent application or the subject matter of a statutory invention registration. The color drawings must be of sufficient quality such that all details in the drawings are reproducible in black and white in the printed patent. Color drawings are not permitted in international applications (see PCT Rule 11.13), or in an application, or copy thereof, submitted under the Office electronic filing system. The Office will accept color drawings in utility or design patent applications and statutory invention registrations only after granting a petition filed under this paragraph explaining why the color drawings are necessary. Any such petition must include the following:

- (i) The fee set forth in § 1.17(h);
- (ii) Three sets of color drawings;
- (iii) A black and white photocopy that accurately depicts, to the extent possible, the subject matter shown in the color drawing; and
- (iv) An amendment to the specification to insert (unless the specification contains or has been previously amended to contain) the following language as the first paragraph of the brief description of the drawings:

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

(b) Photographs.

(1) Black and white. Photographs, including photocopies of photographs, are not ordinarily permitted in utility and design patent applications. The Office will accept photographs in utility and design patent applications, however, if photographs are the only practicable medium for illustrating the claimed invention. For example, photographs or photomicrographs of: electrophoresis gels, blots (e.g., immunological, western, southern, and northern), autoradiographs, cell cultures (stained and unstained), histological tissue cross sections (stained and unstained), animals, plants, *in vivo*

imaging, thin layer chromatography plates, crystalline structures, and, in a design patent application, ornamental effects, are acceptable. If the subject matter of the application admits of illustration by a drawing, the examiner may require a drawing in place of the photograph. The photographs must be of sufficient quality so that all details in the photographs are reproducible in the printed patent.

(2) Color photographs. Color photographs will be accepted in utility and design patent applications if the conditions for accepting color drawings and black and white photographs have been satisfied. See paragraphs (a)(2) and (b)(1) of this section.

(c) Identification of drawings. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin.

(d) Graphic forms in drawings. Chemical or mathematical formulae, tables, and waveforms may be submitted as drawings and are subject to the same requirements as drawings. Each chemical or mathematical formula must be labeled as a separate figure, using brackets when necessary, to show that information is properly integrated. Each group of waveforms must be presented as a single figure, using a common vertical axis with time extending along the horizontal axis. Each individual waveform discussed in the specification must be identified with a separate letter designation adjacent to the vertical axis.

(e) Type of paper. Drawings submitted to the Office must be made on paper which is flexible, strong, white, smooth, non-shiny, and durable. All sheets must be reasonably free from cracks, creases, and folds. Only one side of the sheet may be used for the drawing. Each sheet must be reasonably free from erasures and must be free from alterations, overwritings, and interlineations. Photographs must be developed on paper meeting the sheet-size requirements of paragraph (f) of this section and the margin requirements of paragraph (g) of this section. See paragraph (b) of this section for other requirements for photographs.

(f) Size of paper. All drawing sheets in an application must be the same size. One of the shorter sides of the sheet is regarded as its top. The size of

the sheets on which drawings are made must be:

- (1) 21.0 cm. by 29.7 cm. (DIN size A4), or
- (2) 21.6 cm. by 27.9 cm. (8 1/2 by 11 inches).

(g) Margins. The sheets must not contain frames around the sight (i.e., the usable surface), but should have scan target points (i.e., cross-hairs) printed on two catty-corner margin corners. Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. (5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch), thereby leaving a sight no greater than 17.0 cm. by 26.2 cm. on 21.0 cm. by 29.7 cm. (DIN size A4) drawing sheets, and a sight no greater than 17.6 cm. by 24.4 cm. (6 15/16 by 9 5/8 inches) on 21.6 cm. by 27.9 cm. (8 1/2 by 11 inch) drawing sheets.

(h) Views. The drawing must contain as many views as necessary to show the invention. The views may be plan, elevation, section, or perspective views. Detail views of portions of elements, on a larger scale if necessary, may also be used. All views of the drawing must be grouped together and arranged on the sheet(s) without wasting space, preferably in an upright position, clearly separated from one another, and must not be included in the sheets containing the specifications, claims, or abstract. Views must not be connected by projection lines and must not contain center lines. Waveforms of electrical signals may be connected by dashed lines to show the relative timing of the waveforms.

(1) Exploded views. Exploded views, with the separated parts embraced by a bracket, to show the relationship or order of assembly of various parts are permissible. When an exploded view is shown in a figure that is on the same sheet as another figure, the exploded view should be placed in brackets.

(2) Partial views. When necessary, a view of a large machine or device in its entirety may be broken into partial views on a single sheet, or extended over several sheets if there is no loss in facility of understanding the view. Partial views drawn on separate sheets must always be capable of being linked edge to edge so that no partial view contains parts of another partial view. A smaller scale view should be included showing the whole formed by the partial views and indicating the positions of the parts shown. When a portion of a view is enlarged for magnification

purposes, the view and the enlarged view must each be labeled as separate views.

(i) Where views on two or more sheets form, in effect, a single complete view, the views on the several sheets must be so arranged that the complete figure can be assembled without concealing any part of any of the views appearing on the various sheets.

(ii) A very long view may be divided into several parts placed one above the other on a single sheet. However, the relationship between the different parts must be clear and unambiguous.

(3) Sectional views. The plane upon which a sectional view is taken should be indicated on the view from which the section is cut by a broken line. The ends of the broken line should be designated by Arabic or Roman numerals corresponding to the view number of the sectional view, and should have arrows to indicate the direction of sight. Hatching must be used to indicate section portions of an object, and must be made by regularly spaced oblique parallel lines spaced sufficiently apart to enable the lines to be distinguished without difficulty. Hatching should not impede the clear reading of the reference characters and lead lines. If it is not possible to place reference characters outside the hatched area, the hatching may be broken off wherever reference characters are inserted. Hatching must be at a substantial angle to the surrounding axes or principal lines, preferably 45°. A cross section must be set out and drawn to show all of the materials as they are shown in the view from which the cross section was taken. The parts in cross section must show proper material(s) by hatching with regularly spaced parallel oblique strokes, the space between strokes being chosen on the basis of the total area to be hatched. The various parts of a cross section of the same item should be hatched in the same manner and should accurately and graphically indicate the nature of the material(s) that is illustrated in cross section. The hatching of juxtaposed different elements must be angled in a different way. In the case of large areas, hatching may be confined to an edging drawn around the entire inside of the outline of the area to be hatched. Different types of hatching should have different conventional meanings as regards the nature of a material seen in cross section.

(4) Alternate position. A moved position may be shown by a broken line superimposed upon a suitable view if this can be done without crowding; otherwise, a separate view must be used for this purpose.

(5) Modified forms. Modified forms of construction must be shown in separate views.

(i) Arrangement of views. One view must not be placed upon another or within the outline of another. All views on the same sheet should stand in the same direction and, if possible, stand so that they can be read with the sheet held in an upright position. If views wider than the width of the sheet are necessary for the clearest illustration of the invention, the sheet may be turned on its side so that the top of the sheet, with the appropriate top margin to be used as the heading space, is on the right-hand side. Words must appear in a horizontal, left-to-right fashion when the page is either upright or turned so that the top becomes the right side, except for graphs utilizing standard scientific convention to denote the axis of abscissas (of X) and the axis of ordinates (of Y).

(j) Front page view. The drawing must contain as many views as necessary to show the invention. One of the views should be suitable for inclusion on the front page of the patent application publication and patent as the illustration of the invention. Views must not be connected by projection lines and must not contain center lines. Applicant may suggest a single view (by figure number) for inclusion on the front page of the patent application publication and patent.

(k) Scale. The scale to which a drawing is made must be large enough to show the mechanism without crowding when the drawing is reduced in size to two-thirds in reproduction. Indications such as "actual size" or "scale 1/2" on the drawings are not permitted since these lose their meaning with reproduction in a different format.

(l) Character of lines, numbers, and letters. All drawings must be made by a process which will give them satisfactory reproduction characteristics. Every line, number, and letter must be durable, clean, black (except for color drawings), sufficiently dense and dark, and uniformly thick and well defined. The weight of all lines and letters must be heavy enough to permit adequate reproduction. This requirement applies to all lines however fine, to shading, and to lines representing cut surfaces in sectional views. Lines and strokes of different thicknesses may be

used in the same drawing where different thicknesses have a different meaning.

(m) Shading. The use of shading in views is encouraged if it aids in understanding the invention and if it does not reduce legibility. Shading is used to indicate the surface or shape of spherical, cylindrical, and conical elements of an object. Flat parts may also be lightly shaded. Such shading is preferred in the case of parts shown in perspective, but not for cross sections. See paragraph (h)(3) of this section. Spaced lines for shading are preferred. These lines must be thin, as few in number as practicable, and they must contrast with the rest of the drawings. As a substitute for shading, heavy lines on the shade side of objects can be used except where they superimpose on each other or obscure reference characters. Light should come from the upper left corner at an angle of 45°. Surface delineations should preferably be shown by proper shading. Solid black shading areas are not permitted, except when used to represent bar graphs or color.

(n) Symbols. Graphical drawing symbols may be used for conventional elements when appropriate. The elements for which such symbols and labeled representations are used must be adequately identified in the specification. Known devices should be illustrated by symbols that have a universally recognized conventional meaning and are generally accepted in the art. Other symbols which are not universally recognized may be used, subject to approval by the Office, if they are not likely to be confused with existing conventional symbols, and if they are readily identifiable.

(o) Legends. Suitable descriptive legends may be used subject to approval by the Office, or may be required by the examiner where necessary for understanding of the drawing. They should contain as few words as possible.

(p) Numbers, letters, and reference characters.

(1) Reference characters (numerals are preferred), sheet numbers, and view numbers must be plain and legible, and must not be used in association with brackets or inverted commas, or enclosed within outlines, e.g., encircled. They must be oriented in the same direction as the view so as to avoid having to rotate the sheet. Reference characters should be arranged to follow the profile of the object depicted.

(2) The English alphabet must be used for letters, except where another alphabet is customarily

used, such as the Greek alphabet to indicate angles, wavelengths, and mathematical formulas.

(3) Numbers, letters, and reference characters must measure at least .32 cm. (1/8 inch) in height. They should not be placed in the drawing so as to interfere with its comprehension. Therefore, they should not cross or mingle with the lines. They should not be placed upon hatched or shaded surfaces. When necessary, such as indicating a surface or cross section, a reference character may be underlined and a blank space may be left in the hatching or shading where the character occurs so that it appears distinct.

(4) The same part of an invention appearing in more than one view of the drawing must always be designated by the same reference character, and the same reference character must never be used to designate different parts.

(5) Reference characters not mentioned in the description shall not appear in the drawings. Reference characters mentioned in the description must appear in the drawings.

(q) Lead lines. Lead lines are those lines between the reference characters and the details referred to. Such lines may be straight or curved and should be as short as possible. They must originate in the immediate proximity of the reference character and extend to the feature indicated. Lead lines must not cross each other. Lead lines are required for each reference character except for those which indicate the surface or cross section on which they are placed. Such a reference character must be underlined to make it clear that a lead line has not been left out by mistake. Lead lines must be executed in the same way as lines in the drawing. See paragraph (l) of this section.

(r) Arrows. Arrows may be used at the ends of lines, provided that their meaning is clear, as follows:

(1) On a lead line, a freestanding arrow to indicate the entire section towards which it points;

(2) On a lead line, an arrow touching a line to indicate the surface shown by the line looking along the direction of the arrow; or

(3) To show the direction of movement.

(s) Copyright or Mask Work Notice. A copyright or mask work notice may appear in the drawing, but must be placed within the sight of the drawing immediately below the figure representing the copyright or mask work material and be limited to letters having a print size of .32 cm. to .64 cm. (1/8 to

1/4 inches) high. The content of the notice must be limited to only those elements provided for by law. For example, “©1983 John Doe” (17 U.S.C. 401) and “*M* John Doe” (17 U.S.C. 909) would be properly limited and, under current statutes, legally sufficient notices of copyright and mask work, respectively. Inclusion of a copyright or mask work notice will be permitted only if the authorization language set forth in 1.71(e) is included at the beginning (preferably as the first paragraph) of the specification.

(t) Numbering of sheets of drawings. The sheets of drawings should be numbered in consecutive Arabic numerals, starting with 1, within the sight as defined in paragraph (g) of this section. These numbers, if present, must be placed in the middle of the top of the sheet, but not in the margin. The numbers can be placed on the right-hand side if the drawing extends too close to the middle of the top edge of the usable surface. The drawing sheet numbering must be clear and larger than the numbers used as reference characters to avoid confusion. The number of each sheet should be shown by two Arabic numerals placed on either side of an oblique line, with the first being the sheet number and the second being the total number of sheets of drawings, with no other marking.

(u) Numbering of views.

(1) The different views must be numbered in consecutive Arabic numerals, starting with 1, independent of the numbering of the sheets and, if possible, in the order in which they appear on the drawing sheet(s). Partial views intended to form one complete view, on one or several sheets, must be identified by the same number followed by a capital letter. View numbers must be preceded by the abbreviation “FIG.” Where only a single view is used in an application to illustrate the claimed invention, it must not be numbered and the abbreviation “FIG.” must not appear.

(2) Numbers and letters identifying the views must be simple and clear and must not be used in association with brackets, circles, or inverted commas. The view numbers must be larger than the numbers used for reference characters.

(v) Security markings. Authorized security markings may be placed on the drawings provided they are outside the sight, preferably centered in the top margin.

(w) Corrections. Any corrections on drawings submitted to the Office must be durable and permanent.

(x) Holes. No holes should be made by applicant in the drawing sheets.

(y) Types of drawings. See § 1.152 for design drawings, § 1.165 for plant drawings, and § 1.174 for reissue drawings.

Models, Exhibits, And Specimens

Models or exhibits are not required in most patent applications since the description of the invention in the specification and the drawings must be sufficiently full, clear, and complete and capable of being understood to disclose the invention without the aid of a model.

A working model, or other physical exhibit, may be required by the Office if deemed necessary. This is not done very often. A working model may be requested in the case of applications for patent for alleged perpetual motion devices.

When the invention relates to a composition of matter, the applicant may be required to furnish specimens of the composition, or of its ingredients or intermediates, for inspection or experiment. If the invention is a microbiological invention, a deposit of the micro-organism involved is required.

EXAMINATION OF APPLICATIONS AND PROCEEDINGS IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applications, other than provisional applications, filed in the United States Patent and Trademark Office (USPTO or Office) and accepted as complete applications are assigned for examination to the respective examining technology centers (TC) having charge of the areas of technology related to the invention. In the examining TC, applications are taken up for examination by the examiner to whom they have been assigned in the order in which they have been filed or in accordance with examining procedures established by the Director.

Applications will not be advanced out of turn for examination or for further action except as provided by the rules, or upon order of the Director to expedite the business of the Office, or upon a showing which, in the opinion of the Director, will justify advancing them.

The examination of the application consists of a study of the application for compliance with the legal requirements and a search through U.S. patents, publications of patent applications, foreign patent documents, and available literature, to see if the claimed invention is new, useful and nonobvious and if the application meets the requirements of the patent statute and rules of practice. A decision is reached by the examiner in the light of the study and the result of the search.

As a result of the examination by the Office, patents are granted in the case of about two out of every three applications for patents which are filed.

Restrictions

If two or more inventions are claimed in a single application, and are regarded by the Office to be of such a nature (e.g. independent and distinct) that a single patent should not be issued for both of them, the applicant will be required to limit the application to one of the inventions. The other invention may be made the subject of a separate application which, if filed while the first application is still pending, will be entitled to the benefit of the filing date of the first application. A requirement to restrict the application to one invention may be made before further action by the examiner.

Office Action

The applicant is notified in writing of the examiner's decision by an Office "action" which is normally mailed to the attorney or agent of record. The reasons for any adverse action or any objection or requirement are stated in the Office action and such information or references are given as may be useful in aiding the applicant to judge the propriety of continuing the prosecution of his/her application.

If the claimed invention is not directed to patentable subject matter, the claims will be rejected. If the examiner finds that the claimed invention lacks novelty or differs only in an obvious manner from

what is found in the prior art, the claims may also be rejected. It is not uncommon for some or all of the claims to be rejected on the first Office action by the examiner, relatively few applications are allowed as filed.

Applicant's Reply

The applicant must request reconsideration in writing, and must distinctly and specifically point out the supposed errors in the examiner's Office action. The applicant must reply to every ground of objection and rejection in the prior Office action. The applicant's reply must appear throughout to be a bona fide attempt to advance the case to final action or allowance. The mere allegation that the examiner has erred will not be received as a proper reason for such reconsideration.

In amending an application in reply to a rejection, the applicant must clearly point out why he/she thinks the amended claims are patentable in view of the state of the art disclosed by the prior references cited or the objections made. He/she must also show how the claims as amended avoid such references or objections. After reply by the applicant, the application will be reconsidered, and the applicant will be notified as to the status of the claims, that is, whether the claims are rejected, or objected to, or whether the claims are allowed, in the same manner as after the first examination. The second Office action usually will be made final.

Interviews with examiners may be arranged, but an interview does not remove the necessity of replying to Office actions within the required time.

Final Rejection

On the second or later consideration, the rejection or other action may be made final. The applicant's reply is then limited to appeal in the case of rejection of any claim and further amendment is restricted. Petition may be taken to the Director in the case of objections or requirements not involved in the rejection of any claim. Reply to a final rejection or action must include cancellation of, or appeal from the rejection of, each claim so rejected and, if any claim stands allowed, compliance with any requirement or objection as to form. In making such final rejection, the examiner repeats or states all

grounds of rejection then considered applicable to the claims in the application.

AMENDMENTS TO APPLICATION

Following are some details concerning amendments to the application: The applicant may amend before or after the first examination and action as specified in the rules, or when and as specifically required by the examiner.

After final rejection or action, amendments may be made canceling claims or complying with any requirement of form which has been made in an Office action. The admission of any such amendment or its refusal, and any proceedings relative thereto, shall not operate to relieve the application from its condition as subject to appeal or to save it from abandonment. If amendments touching the merits of the application are presented after final rejection, or after appeal has been taken, or when such amendment might not otherwise be proper, they may be admitted upon a showing of good and sufficient reasons why they are necessary and were not earlier presented.

No amendment can be made as a matter of right in appealed cases. After decision on appeal, amendments can only be made as provided in the rules.

The specifications, claims, and drawing must be amended and revised when required, to correct inaccuracies of description and definition or unnecessary words, and to provide substantial correspondence between the claims, the description, and the drawing. All amendments of the drawings or specifications, and all additions thereto must not include new matter beyond the original disclosure. Matter not found in either, involving a departure from or an addition to the original disclosure, cannot be added to the application even though supported by a supplemental oath or declaration, and can be shown or claimed only in a separate application.

Amendments to the specification must be made by the submission of clean new or replacement paragraph(s), section(s), specification, or claim(s). This practice will provide a specification (including claims) in clean, or substantially clean, form that can be effectively captured and converted by optical

character recognition (OCR) scanning during the patent printing process. This practice requires applicant to provide, in addition to the clean version of a replacement paragraph/section/claim, a marked-up version using applicant's choice of a conventional marking system to indicate the changes, which will aid the examiner in identifying the changes that have been made. The marked-up version must be based on the previous version and indicate (by markings) how the previous version has been modified to produce the clean version submitted in the current amendment. The term "previous version" means the version of record in the application as originally filed or from a previously entered amendment. In addition, when presenting new or amended claims, the applicant must point out how they avoid any reference or ground rejection of record, which may be pertinent, in a remarks/arguments section.

The following format is suggested in an amendment paper: (1) a clean version of each replacement paragraph/section/claim with clear instructions for entry, (2) starting on a separate page, any remarks/arguments (37 CFR 1.111 and MPEP 714), and (3) starting on a separate page, a marked-up version entitled "*Version with markings to show changes made.*"

No change in the drawing may be made except by permission of the Office. Changes in the construction shown in any drawing may be made only by submitting new drawings. A sketch in permanent ink showing proposed changes, to become part of the record, must be filed for approval by the Office before the new drawings are filed. The paper requesting amendments to the drawing should be separate from other papers.

The original numbering of the claims must be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When claims are added by amendment or substituted for canceled claims, they must be numbered by the applicant consecutively beginning with the number next following the highest numbered claim previously presented. When the application is ready for allowance, the examiner, if necessary, will renumber the claims consecutively in the order in which they appear or in such order as may have been requested by applicant.

TIME FOR REPLY AND ABANDONMENT

The reply of an applicant to an action by the Office must be made within a prescribed time limit. The maximum period for reply is set at six months by the statute which also provides that the Director may shorten the time for reply to not less than 30 days. The usual period for reply to an Office action is three months. A shortened time for reply may be extended up to the maximum six-month period. An extension of time fee is normally required to be paid if the reply period is extended. The amount of the fee is dependent upon the length of the extension. Extensions of time are generally not available after an application has been allowed. If no reply is received within the time period, the application is considered as abandoned and no longer pending. However, if it can be shown that the failure to prosecute was unavoidable or unintentional, the application may be revived by the Director. The revival requires a petition to the Director, and a fee for the petition, which must be filed without delay. The proper reply must also accompany the petition if it has not yet been filed.

APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES AND TO THE COURTS

If the examiner persists in the rejection of any of the claims in an application, or if the rejection has been made final, the applicant may appeal to the Board of Patent Appeals and Interferences in the United States Patent and Trademark Office. The Board of Patent Appeals and Interferences consists of the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, the Deputy Under Secretary of Commerce for Intellectual Property and Deputy Director of the USPTO, the Commissioner for Patents, and the administrative patent judges, but normally each appeal is heard by only three members. An appeal fee is required and the applicant must file a brief to support his/her position. An oral hearing will be held if requested upon payment of the specified fee.

As an alternative to appeal, in situations where an applicant desires consideration of different claims or further evidence, a request for continued examination (RCE) or continuation application is often filed. The RCE requires a fee and a submission (reply) that continues prosecution, on filing of the RCE. The continuation application is a new application which requires a filing fee and the applicant should include the claims and evidence for which further consideration is desired. If it is filed before expiration of the period for appeal and specific reference is made therein to the earlier application, applicant will be entitled to the earlier filing date for subject matter common to both applications. A continuation application may also be filed as a Continued Prosecution Application (CPA) by submitting a request and the appropriate fee, but only if the earlier application has a filing date before May 29, 2000.

If the decision of the Board of Patent Appeals and Interferences is still adverse to the applicant, an appeal may be taken to the Court of Appeals for the Federal Circuit or a civil action may be filed against the Director in the United States District Court for the District of Columbia. The Court of Appeals for the Federal Circuit will review the record made in the Office and may affirm or reverse the Office's action. In a civil action, the applicant may present testimony in the court, and the court will make a decision.

INTERFERENCES

Occasionally two or more applications are filed by different inventors claiming substantially the same patentable invention. The patent can only be granted to one of them, and a proceeding known as an "interference" is instituted by the Office to determine who is the first inventor and entitled to the patent. About one percent of the applications filed become involved in an interference proceeding. Interference proceedings may also be instituted between an application and a patent already issued, provided that the patent has not been issued, nor the application been published, for more than one year prior to the filing of the conflicting application, and provided also that the conflicting application is not barred from being patentable for some other reason.

Each party to such a proceeding must submit evidence of facts proving when the invention was made. In view of the necessity of proving the various facts and circumstances concerning the making of the invention during an interference, inventors must be able to produce evidence to do this. If no evidence is submitted a party is restricted to the date of filing the application as his/her earliest date. The priority question is determined by a board of three administrative patent judges on the evidence submitted. From the decision of the Board of Patent Appeals and Interferences, the losing party may appeal to the Court of Appeals for the Federal Circuit or file a civil action against the winning party in the appropriate United States district court.

The terms "conception of the invention" and "reduction to practice" are encountered in connection with priority questions. Conception of the invention refers to the completion of the devising of the means for accomplishing the result. Reduction to practice refers to the actual construction of the invention in physical form: in the case of a machine it includes the actual building of the machine, in the case of an article or composition it includes the actual making of the article or composition, in the case of a process it includes the actual carrying out of the steps of the process. Actual operation, demonstration, or testing for the intended use is also usually necessary. The filing of a regular application for patent completely disclosing the invention is treated as equivalent to reduction to practice. The inventor who proves to be the first to conceive the invention and the first to reduce it to practice will be held to be the prior inventor, but more complicated situations cannot be stated this simply.

ALLOWANCE AND ISSUE OF PATENT

If, on examination of the application, or at a later stage during the reconsideration of the application, the patent application is found to be allowable, a notice of allowance will be sent to the applicant, or to applicant's attorney or agent of record, if any, and a fee for issuing the patent is due within three months from the date of the notice. If timely payment of the issue fee is not made, the application will be regarded as abandoned. See current fee schedule.

A provision is made in the statute whereby the Director may accept the fee late, when the delay is shown to be unavoidable or unintentional. When the issue fee is paid, the patent issues as soon as possible after the date of payment, dependent upon the volume of printing on hand. The patent grant then is delivered or mailed on the day of its grant, or as soon thereafter as possible, to the inventor's attorney or agent if there is one of record, otherwise directly to the inventor. On the date of the grant, the patent file becomes open to the public for applications not opened earlier by publication of the application. See 37 CFR 1.211-1.221 regarding the publication of applications. Printed copies of the specification and drawing are available on the same date.

In cases where the publication of an invention by the granting of a patent would be detrimental to the national defense, the patent law gives the Director the power to withhold the grant of the patent and to order the invention kept secret for such period of time as the national interest requires.

Patent Term Extension and Adjustment

The terms of certain patents may be subject to extension or adjustment under 35 U.S.C. 154(b). Such extension or adjustment results from certain specified types of delays which may occur while an application is pending before the Office.

Utility and plant patents which issue from original applications filed between June 8, 1995 and May 28, 2000 may be eligible for patent term extension (PTE) as set forth in 37 CFR 1.701. Such PTE may result from delays due to interference proceedings under 35 U.S.C. 135(a), secrecy orders under 35 U.S.C. 181, or successful appellate review.

Utility and plant patents which issue from original applications filed on or after May 29, 2000 may be eligible for patent term adjustment (PTA) as set forth in 37 CFR 1.702 – 1.705. There are three main bases for PTA under 35 U.S.C. 154(b). The first basis for PTA is the failure of the Office to take certain actions within specific time frames set forth in 35 U.S.C. 154(b)(1)(A) (See 37 CFR 1.702(a) and 1.703(a)). The second basis for PTA is the failure of the Office to issue a patent within three years of the actual filing date of the application as

set forth in 35 U.S.C. 154(b)(1)(B) (See 37 CFR 1.702(b) and 1.703(b)). The third basis for PTA is set forth in 35 U.S.C. 154(b)(1)(C), and includes delays due to interference proceedings under 35 U.S.C. 135(a), secrecy orders under 35 U.S.C. 181, or successful appellate review (See 37 CFR 1.702(c)-(e) and 1.703(c)-(e)).

Any PTA which has accrued in an application will be reduced by the time period during which an applicant failed to engage in reasonable efforts to conclude prosecution of the application pursuant to 35 U.S.C. 154(b)(2)(C). A non-exclusive list of activities which constitute failure to engage in reasonable efforts to conclude prosecution is set forth in 37 CFR 1.704.

An initial PTA value is printed on the notice of allowance and issue fee due, and a final PTA value is printed on the front of the patent. Any request for reconsideration of the PTA value printed on the notice of allowance and issue fee due should be made in the form of an application for patent term adjustment, which must be filed prior to or at the same time as the payment of the issue fee. (See 37 CFR 1.705.)

NATURE OF PATENT AND PATENT RIGHTS

The patent is issued in the name of the United States under the seal of the United States Patent and Trademark Office, and is either signed by the Director of the USPTO or is electronically written thereon and attested by an Office official. The patent contains a grant to the patentee, and a printed copy of the specification and drawing is annexed to the patent and forms a part of it. The grant confers "the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States" and its territories and possessions for which the term of the patent shall be generally 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application under 35 U.S.C. 120, 121 or 365(c), from the date of the earliest such application was filed, and subject to the payment of maintenance fees as provided by law.

The exact nature of the right conferred must be carefully distinguished, and the key is in the words "right to exclude" in the phrase just quoted. The patent does not grant the right to make, use, offer for sale or sell or import the invention but only grants the exclusive nature of the right. Any person is ordinarily free to make, use, offer for sale or sell or import anything he/she pleases, and a grant from the government is not necessary. The patent only grants the right to exclude others from making, using, offering for sale or selling or importing the invention. Since the patent does not grant the right to make, use, offer for sale, or sell, or import the invention, the patentee's own right to do so is dependent upon the rights of others and whatever general laws might be applicable. A patentee, merely because he/she has received a patent for an invention, is not thereby authorized to make, use, offer for sale, or sell, or import the invention if doing so would violate any law. An inventor of a new automobile who has obtained a patent thereon would not be entitled to use the patented automobile in violation of the laws of a state requiring a license, nor may a patentee sell an article, the sale of which may be forbidden by a law, merely because a patent has been obtained.

Neither may a patentee make, use, offer for sale, or sell, or import his/her own invention if doing so would infringe the prior rights of others. A patentee may not violate the federal antitrust laws, such as by resale price agreements or entering into combination in restraints of trade, or the pure food and drug laws, by virtue of having a patent. Ordinarily there is nothing that prohibits a patentee from making, using, offering for sale, or selling, or importing his/her own invention, unless he/she thereby infringes another's patent which is still in force. For example, a patent for an improvement of an original device already patented would be subject to the patent on the device.

The term of the patent shall be generally 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application under 35 U.S.C. 120, 121 or 365(c), from the date of the earliest such application was filed, and subject to the payment of maintenance fees as provided by law. A maintenance fee is due 3 1/2, 7 1/2 and 11 1/2 years after the original grant for all patents issuing from the applications filed on and

after December 12, 1980. The maintenance fee must be paid at the stipulated times to maintain the patent in force. After the patent has expired anyone may make, use, offer for sale, or sell or import the invention without permission of the patentee, provided that matter covered by other unexpired patents is not used. The terms may be extended for certain pharmaceuticals and for certain circumstances as provided by law.

MAINTENANCE FEES

All utility patents that issue from applications filed on and after December 12, 1980 are subject to the payment of maintenance fees which must be paid to maintain the patent in force. These fees are due at 3 1/2, 7 1/2 and 11 1/2 years from the date the patent is granted and can be paid without a surcharge during the "window-period" which is the six-month period preceding each due date, e.g., three years to three years and six months. (See fee schedule for a list of maintenance fees.) In submitting maintenance fees and any necessary surcharges, identification of the patents for which maintenance fees are being paid must include the patent number, and the application number of the U.S. application for the patent on which the maintenance fee is being paid. If the payment includes identification of only the patent number, the Office may apply payment to the to the patent identified by patent number in the payment or the Office may return the payment. (See 37, Code of Federal Regulations, section 1.366(c).)

Failure to pay the current maintenance fee on time may result in expiration of the patent. A six-month grace period is provided when the maintenance fee may be paid with a surcharge. The grace period is the six-month period immediately following the due date. The USPTO does not mail notices to patent owners that maintenance fees are due. If, however, the maintenance fee is not paid on time, efforts are made to remind the responsible party that the maintenance fee may be paid during the grace period with a surcharge.

CORRECTION OF PATENTS

Once the patent is granted, it is outside the jurisdiction of the USPTO except in a few respects.

The Office may issue without charge a certificate correcting a clerical error it has made in the patent when the printed patent does not correspond to the record in the Office. These are mostly corrections of typographical errors made in printing. Some minor errors of a typographical nature made by the applicant may be corrected by a certificate of correction for which a fee is required. The patentee may disclaim one or more claims of his/her patent by filing in the Office a disclaimer as provided by the statute.

When the patent is defective in certain respects, the law provides that the patentee may apply for a reissue patent. Following an examination in which the proposed changes correcting any defects in the original patent are evaluated, a reissue patent would be granted to replace the original and is granted only for the balance of the unexpired term. However, the nature of the changes that can be made by means of the reissue are rather limited; new matter cannot be added. In a different type of proceeding, any person may file a request for reexamination of a patent, along with the required fee, on the basis of prior art consisting of patents or printed publications. At the conclusion of the reexamination proceedings, a certificate setting forth the results of the reexamination proceeding is issued.

ASSIGNMENTS AND LICENSES

A patent is personal property and may be sold to others or mortgaged; it may be bequeathed by a will; and it may pass to the heirs of a deceased patentee. The patent law provides for the transfer or sale of a patent, or of an application for patent, by an instrument in writing. Such an instrument is referred to as an assignment and may transfer the entire interest in the patent. The assignee, when the patent is assigned to him or her, becomes the owner of the patent and has the same rights that the original patentee had.

The statute also provides for the assignment of a part interest, that is, a half interest, a fourth interest, etc., in a patent. There may also be a grant that conveys the same character of interest as an assignment but only for a particularly specified part of the United States. A mortgage of patent property passes ownership thereof to the mortgagee or lender until

the mortgage has been satisfied and a retransfer from the mortgagee back to the mortgagor, the borrower, is made. A conditional assignment also passes ownership of the patent and is regarded as absolute until canceled by the parties or by the decree of a competent court.

An assignment, grant, or conveyance of any patent or application for patent should be acknowledged before a notary public or officer authorized to administer oaths or perform notarial acts. The certificate of such acknowledgment constitutes *prima facie* evidence of the execution of the assignment, grant, or conveyance.

Recording of Assignments

The Office records assignments, grants, and similar instruments sent to it for recording, and the recording serves as notice. If an assignment, grant, or conveyance of a patent or an interest in a patent (or an application for patent) is not recorded in the Office within three months from its date, it is void against a subsequent purchaser for a valuable consideration without notice, unless it is recorded prior to the subsequent purchase.

An instrument relating to a patent should identify the patent by number and date (the name of the inventor and title of the invention as stated in the patent should also be given). An instrument relating to an application should identify the application by its application number and date of filing, the name of the inventor, and title of the invention as stated in the application should also be given. Sometimes an assignment of an application is executed at the same time that the application is prepared and before it has been filed in the Office. Such assignment should adequately identify the application, as by its date of execution and name of the inventor and title of the invention, so that there can be no mistake as to the application intended. If an application has been assigned and the assignment is recorded, on or before the date the issue fee is paid, the patent will be issued to the assignee as owner. If the assignment is of a part interest only, the patent will be issued to the inventor and assignee as joint owners.

Joint Ownership

Patents may be owned jointly by two or more persons as in the case of a patent granted to joint inventors, or

in the case of the assignment of a part interest in a patent. Any joint owner of a patent, no matter how small the part interest, may make, use, offer for sale and sell and import the invention for his or her own profit provided they do not infringe another's patent rights, without regard to the other owners, and may sell the interest or any part of it, or grant licenses to others, without regard to the other joint owner, unless the joint owners have made a contract governing their relation to each other. It is accordingly dangerous to assign a part interest without a definite agreement between the parties as to the extent of their respective rights and their obligations to each other if the above result is to be avoided.

The owner of a patent may grant licenses to others. Since the patentee has the right to exclude others from making, using, offering for sale, or selling or importing the invention, no one else may do any of these things without his/her permission. A patent license agreement is in essence nothing more than a promise by the licensor not to sue the licensee. No particular form of license is required; a license is a contract and may include whatever provisions the parties agree upon, including the payment of royalties, etc.

The drawing up of a license agreement (as well as assignments) is within the field of an attorney at law. Such attorney should be familiar with patent matters as well. A few States have prescribed certain formalities to be observed in connection with the sale of patent rights.

INFRINGEMENT OF PATENTS

Infringement of a patent consists of the unauthorized making, using, offering for sale, or selling any patented invention within the United States or U.S. Territories, or importing into the United States of any patented invention during the term of the patent. If a patent is infringed, the patentee may sue for relief in the appropriate federal court. The patentee may ask the court for an injunction to prevent the continuation of the infringement and may also ask the court for an award of damages because of the infringement. In such an infringement suit, the defendant may raise the question of the validity of the patent, which is then decided by the court. The defendant may also aver that what is being done does not constitute infringement. Infringement is determined primarily by the language of the claims of the patent and, if

what the defendant is making does not fall within the language of any of the claims of the patent, there is no literal infringement.

Suits for infringement of patents follow the rules of procedure of the federal courts. From the decision of the district court, there is an appeal to the Court of Appeals for the Federal Circuit. The Supreme Court may thereafter take a case by writ of certiorari. If the United States Government infringes a patent, the patentee has a remedy for damages in the United States Court of Federal Claims. The government may use any patented invention without permission of the patentee, but the patentee is entitled to obtain compensation for the use by or for the government. The Office has no jurisdiction over questions relating to infringement of patents. In examining applications for patent, no determination is made as to whether the invention sought to be patented infringes any prior patent. An improvement invention may be patentable, but it might infringe a prior unexpired patent for the invention improved upon, if there is one.

PATENT MARKING AND PATENT PENDING

A patentee who makes or sells patented articles, or a person who does so for or under the patentee is required to mark the articles with the word "Patent" and the number of the patent. The penalty for failure to mark is that the patentee may not recover damages from an infringer unless the infringer was duly notified of the infringement and continued to infringe after the notice.

The marking of an article as patented when it is not in fact patented is against the law and subjects the offender to a penalty. Some persons mark articles sold with the terms "Patent Applied For" or "Patent Pending." These phrases have no legal effect, but only give information that an application for patent has been filed in the USPTO. The protection afforded by a patent does not start until the actual grant of the patent. False use of these phrases or their equivalent is prohibited.

DESIGN PATENTS

The patent laws provide for the granting of design patents to any person who has invented any new and

nonobvious ornamental design for an article of manufacture. The design patent protects only the appearance of an article, but not its structural or functional features. The proceedings relating to granting of design patents are the same as those relating to other patents with a few differences. See current fee schedule for the filing fee for a design application. A design patent has a term of 14 years from grant, and no fees are necessary to maintain a design patent in force. If on examination it is determined that an applicant is entitled to a design patent under the law, a notice of allowance will be sent to the applicant or applicant's attorney, or agent, calling for the payment of an issue fee. The drawing of the design patent conforms to the same rules as other drawings, but no reference characters are allowed and the drawing should clearly depict the appearance, since the drawing defines the scope of patent protection. The specification of a design application is short and ordinarily follows a set form. Only one claim is permitted, following a set form that refers to the drawing(s).

PLANT PATENTS

The law also provides for the granting of a patent to anyone who has invented or discovered and asexually reproduced any distinct and new variety of plant, including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber-propagated plant or a plant found in an uncultivated state.

Asexually propagated plants are those that are reproduced by means other than from seeds, such as by the rooting of cuttings, by layering, budding, grafting, inarching, etc.

With reference to tuber-propagated plants, for which a plant patent cannot be obtained, the term "tuber" is used in its narrow horticultural sense as meaning a short, thickened portion of an underground branch. Such plants covered by the term "tuber-propagated" are the Irish potato and the Jerusalem artichoke.

An application for a plant patent consists of the same parts as other applications. The term of a plant patent shall be 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application under 35

U.S.C. 120, 121 or 365(c), from the date of the earliest such application was filed.

The specification should include a complete detailed description of the plant and the characteristics thereof that distinguish the same over related known varieties, and its antecedents, expressed in botanical terms in the general form followed in standard botanical text books or publications dealing with the varieties of the kind of plant involved (evergreen tree, dahlia plant, rose plant, apple tree, etc.), rather than a mere broad non-botanical characterization such as commonly found in nursery or seed catalogs. The specification should also include the origin or parentage of the plant variety sought to be patented and must particularly point out where and in what manner the variety of plant has been asexually reproduced. The Latin name of the genus and species of the plant should be stated. Where color is a distinctive feature of the plant, the color should be positively identified in the specification by reference to a designated color as given by a recognized color dictionary. Where the plant variety originated as a newly found seedling, the specification must fully describe the conditions (cultivation, environment, etc.) under which the seedling was found growing to establish that it was not found in an uncultivated state.

A plant patent is granted on the entire plant. It therefore follows that only one claim is necessary and only one is permitted.

The oath or declaration required of the applicant in addition to the statements required for other applications must include the statement that the applicant has asexually reproduced the new plant variety. If the plant is a newly found plant, the oath or declaration must also state that the plant was found in a cultivated area.

Plant patent drawings are not mechanical drawings and should be artistically and competently executed. The drawing must disclose all the distinctive characteristics of the plant capable of visual representation. When color is a distinguishing characteristic of the new variety, the drawing must be in color. Two duplicate copies of color drawings must be submitted. All color drawings should include a one-inch margin at the top for Office markings when the patent is printed.

Specimens of the plant variety, its flower or fruit, should not be submitted unless specifically called for by the examiner.

The filing fee on each plant application and the issue fee can be found in the fee schedule. For a qualifying small entity filing and issue fees are reduced by half. Plant patent applications may be published pursuant to Title 35, United States Code, Section 122(b), but the publication is not reduced for small entities.

All inquiries relating to plant patents and pending plant patent applications should be directed to the United States Patent and Trademark Office and not to the Department of Agriculture.

The Plant Variety Protection Act (Public Law 91577), approved December 24, 1970, provides for a system of protection for sexually reproduced varieties, for which protection was not previously provided, under the administration of a Plant Variety Protection Office within the Department of Agriculture. Requests for information regarding the protection of sexually reproduced varieties should be addressed to Commissioner, Plant Variety Protection Office, Agricultural Marketing Service, National Agricultural Library Bldg., Room 0, 10301 Baltimore Blvd., Beltsville, Md. 20705-2351.

TREATIES AND FOREIGN PATENTS

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in other countries must apply for a patent in each of the other countries or in regional patent offices. Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country, in accordance with the requirements of that country.

The laws of many countries differ in various respects from the patent law of the United States. In most foreign countries, publication of the invention before the date of the application will bar the right to a patent. In most foreign countries maintenance fees are required. Most foreign countries require that the patented invention must be manufactured in that

country after a certain period, usually three years. If there is no manufacture within this period, the patent may be void in some countries, although in most countries the patent may be subject to the grant of compulsory licenses to any person who may apply for a license.

There is a treaty relating to patents which is adhered to by 140 countries, including the United States, and is known as the Paris Convention for the Protection of Industrial Property. It provides that each country guarantees to the citizens of the other countries the same rights in patent and trademark matters that it gives to its own citizens. The treaty also provides for the right of priority in the case of patents, trademarks and industrial designs (design patents). This right means that, on the basis of a regular first application filed in one of the member countries, the applicant may, within a certain period of time, apply for protection in all the other member countries. These later applications will then be regarded as if they had been filed on the same day as the first application. Thus, these later applicants will have priority over applications for the same invention that may have been filed during the same period of time by other persons. Moreover, these later applications, being based on the first application, will not be invalidated by any acts accomplished in the interval, such as, for example, publication or exploitation of the invention, the sale of copies of the design, or use of the trademark. The period of time mentioned above, within which the subsequent applications may be filed in the other countries, is 12 months in the case of first applications for patent and six months in the case of industrial designs and trademarks.

Another treaty, known as the Patent Cooperation Treaty, was negotiated at a diplomatic conference in Washington, D.C., in June of 1970. The treaty came into force on January 24, 1978, and is presently adhered to by over 90 countries, including the United States. The treaty facilitates the filing of applications for patent on the same invention in member countries by providing, among other things, for centralized filing procedures and a standardized application format.

The timely filing of an international application affords applicants an international filing date in each country which is designated in the international

application and provides (1) a search of the invention and (2) a later time period within which the national applications for patent must be filed. A number of patent attorneys specialize in obtaining patents in foreign countries.

Under U.S. law it is necessary, in the case of inventions made in the United States, to obtain a license from the Director of the USPTO before applying for a patent in a foreign country. Such a license is required if the foreign application is to be filed before an application is filed in the United States or before the expiration of six months from the filing of an application in the United States unless a filing receipt with a license grant issued earlier. The filing of an application for patent constitutes the request for a license and the granting or denial of such request is indicated in the filing receipt mailed to each applicant. After six months from the U.S. filing, a license is not required unless the invention has been ordered to be kept secret. If the invention has been ordered to be kept secret, the consent to the filing abroad must be obtained from the Director of the USPTO during the period the order of secrecy is in effect.

Foreign Applicants for U.S. Patents

The patent laws of the United States make no discrimination with respect to the citizenship of the inventor. Any inventor, regardless of his/her citizenship, may apply for a patent on the same basis as a U.S. citizen. There are, however, a number of particular points of special interest to applicants located in foreign countries.

The application for patent in the United States must be made by the inventor and the inventor must sign the oath or declaration (with certain exceptions), differing from the law in many countries where the signature of the inventor and an oath of inventorship are not necessary. If the inventor is dead, the application may be made by his/her executor or administrator, or equivalent, and in the case of mental disability it may be made by his/her legal representative (guardian).

No U.S. patent can be obtained if the invention was patented abroad before applying in the United States by the inventor or his/her legal representatives or if a foreign application was filed more than 12 months

before filing in the United States. Six months are allowed in the case of a design patent.

An application for a patent filed in the United States by any person who has previously regularly filed an application for a patent for the same invention in a foreign country which affords similar privileges to citizens of the United States shall have the same force and effect for the purpose of overcoming intervening acts of others as if filed in the United States on the date on which the application for a patent for the same invention was first filed in such foreign country. This is the case, provided the application in the United States is filed within 12 months (six months in the case of a design patent) from the earliest date on which any such foreign application was filed and claims priority under 35 U.S.C. 119(b) to the foreign application. A copy of the foreign application certified by the patent office of the country in which it was filed is required to secure this right of priority.

If any application for patent has been filed in any foreign country by the applicant or by his/her legal representatives or assigns prior to his/her application in the United States, in order to claim priority under 35 U.S.C. 119(b) to the foreign application, the applicant must, in the oath or declaration accompanying the application, state the country in which the earliest such application has been filed, giving the date of filing the application. If foreign priority is claimed, any foreign application having a filing date before that of the application on which priority is claimed must also be identified in the oath or declaration. Where no claim for foreign priority under 35 U.S.C. 119(b) is made in the U.S. application, the applicant should identify in the oath or declaration those foreign applications disclosing similar inventions filed more than a year before the filing in the United States.

An oath or alternatively a declaration must be made with respect to every application. When the applicant is in a foreign country the oath or affirmation may be before any diplomatic or consular officer of the United States, or before any officer having an official seal and authorized to administer oaths in the foreign country, whose authority shall be proved by a certificate of a diplomatic or consular officer of the United States. The oath is attested in all cases by the proper official seal of the officer before whom the oath is made.

When the oath is taken before an officer in the country foreign to the United States, all the application papers (except the drawing) must be attached together and a ribbon passed one or more times through all the sheets of the application, and the ends of the ribbons brought together under the seal before the latter is affixed and impressed, or each sheet must be impressed with the official seal of the officer before whom the oath was taken. A declaration merely requires the use of a specific averment found in 37 CFR 1.68.

If the application is filed by the legal representative (executor, administrator, etc.) of a deceased inventor, the legal representative must make the oath or declaration.

When a declaration is used, the ribboning procedure is not necessary, nor is it necessary to appear before an official in connection with the making of a declaration.

A foreign applicant may be represented by any patent attorney or agent who is registered to practice before the United States Patent and Trademark Office.

Frequently-Asked Questions about Patents

1. Q. What do the terms "patent pending" and "patent applied for" mean?

A. They are used by a manufacturer or seller of an article to inform the public that an application for patent on that article is on file in the United States Patent and Trademark Office. The law imposes a fine on those who use these terms falsely to deceive the public.

2. Q. Is there any danger that the USPTO will give others information contained in my application while it is pending?

A. Most patent applications filed on or after November 29, 2000, will be published 18 months after the filing date of the application, or any earlier filing date relied upon under Title 35, United States Code. Otherwise, all patent applications are maintained in the strictest confidence until the patent is issued or the application is published. After the application has been published, however, a member of the public may request a copy of the application file. After the patent is issued, the Office file containing the application and all correspondence leading up to issuance of the patent is made available in the Files Information Unit for inspection by anyone, and copies of these files may be purchased from the Office.

3. Q. May I write to the USPTO directly about my application after it is filed?

A. The Office will answer an applicant's inquiries as to the status of the application, and inform you whether your application has been rejected, allowed, or is awaiting action. However, if you have a patent attorney or agent of record in the application file the Office will not correspond with both you and the attorney/agent concerning the merits of your application. All comments concerning your application should be forwarded through your attorney or agent.

4. Q. Is it necessary to go to the USPTO to transact business concerning patent matters?

A. No. Most business with the Office is conducted by written correspondence. Interviews regarding pending applications can be arranged with examiners if necessary and are often helpful.

5. Q. If two or more persons work together to make an invention, to whom will the patent be granted?

A. If each had a share in the ideas forming the invention as defined in the claims – even if only as to one claim, they are joint inventors and a patent will be issued to them jointly on the basis of a proper patent application. If, on the other hand, one of these persons has provided all of the ideas of the invention, and the other has only followed instructions in making it, the person who contributed the ideas is the sole inventor and the patent application and patent shall be in his/her name alone.

6. Q. If a first person furnishes all of the ideas to make an invention and a second person employs the first person or furnishes the money for building and testing the invention, should the patent application be filed by the first and second persons jointly?

A. No. The application must be signed by the true inventor, and filed in the USPTO, in the inventor's name. This is the person who furnishes the ideas (e.g. the first person in the above fact pattern), not the employer or the person who furnishes the money.

7. Q. Does the USPTO control the fees charged by patent attorneys and agents for their services?

A. No. This is a matter between you and your patent attorney or agent in which the Office takes no part. To avoid misunderstanding you may wish to ask for estimate charges for: (a) the search (b) preparation of the patent application, and (c) USPTO prosecution.

8. Q. Will the USPTO help me to select a patent attorney or agent to make my patent search or to prepare and prosecute my patent application?

A. No. The Office cannot make this choice for you. However, your own friends or general attorney may help you in making a selection from among those listed as registered practitioners on the Office roster. Also, some bar associations operate lawyer referral services that maintain lists of patent lawyers available to accept new clients.

9. Q. Will the USPTO advise me as to whether a certain patent promotion organization is reliable and trustworthy?

A. No. The Office has no control over such organizations. The Office will publish complaints regarding invention promoters and replies from the invention promoters. The Office will not undertake any investigation of the invention promoters. Questions or complaints should be directed to the Office of Independent Inventor Programs, United States Patent and Trademark Office, Washington, D.C. 20231 or call at (703) 306-5568.

It is advisable, however, to check on the reputation of invention promotion firms before making any commitments. It is suggested that you obtain this information from the Better Business Bureau of the city in which the organization is located, or from the bureau of commerce and industry or bureau of consumer affairs of the state in which the organization has its place of business. You may also undertake to make sure that you are dealing with reliable people by asking your own patent attorney or agent or by asking others who may know them.

10. Q. Are there any organizations in my area which can tell me how and where I may be able to obtain assistance in developing and marketing my invention?

A. Yes. In your own or neighboring communities you may inquire of such organizations as chambers of commerce and banks. Many communities have locally financed industrial development organizations, that can help you locate manufacturers and individuals who might be interested in promoting your idea.

11. Q. Are there any state government agencies that can help me in developing and marketing of my invention?

A. Yes. In nearly all states there are state planning and development agencies or departments of commerce and industry which seek new product and new process ideas to assist manufacturers and communities in the state. If you do not know the names or addresses of your state organizations you can obtain this information by writing to the governor of your state.

12. Q. Can the USPTO assist me in the developing and marketing of my patent?

A. No. The Office cannot act or advise concerning the business transactions or arrangements that are involved in the development and marketing of an invention. The Office, however, will publish for a fee, at the request of a patent owner, a notice in the *Official Gazette* that the patent is available for licensing or sale. In addition, the Office of Independent Inventor Programs (OIIP) was established in March 1999 in order to meet the special needs of independent inventors. The OIIP establishes new mechanisms to better disseminate information about the patent and trademark processes and to foster regular communication between the USPTO and independent inventors.



**United States Patent and Trademark Office
Washington, DC 20231**

An Agency of the United States Department of Commerce